anticipation

CHRISTIAN SOCIAL THOUGHT IN FUTURE PERSPECTIVE

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These papers are circulated for the information of participants in the ecumenical enquiry on "The Future of Man and Society in a World of Science-Based Technology". Comments are welcome.

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INTRODUCTORY NOTE

A challenging, often intense, theological debate has marked the ecumenical study of the "Future of Man and Society in a World of Science-Based Technology". This issue of *Anticipation* presents some papers and reports which may indicate the range of this debate:

- The report "A Theological Critique of Scientific Rationality" was prepared at a consultation on Science and Theology, in Zurich, June 29 – July 3, 1973.
- The Zurich Consultation was chaired by Prof. Langdon Gilkey, of the University of Chicago Divinity School, who also presented the paper reproduced here.
- The paper by Prof. Kosuke Koyama, "Theological Reflections on the Bamboo Room and the Oil Room", was presented to the Ecumenical Conference on the Scientific, Technological and Social Revolutions in Asian Perspective", held in Kuala Lumpur, Malaysia, April 19-23, 1973. Prof. Koyama is Director of the South East Asia Graduate School of Theology in Singapore.
- Last year the World Council published Prof. Thomas S. Derr's study of *Ecology and Human Liberation*, a book about the theological issues in the contemporary discussion of environment questions. His analysis provoked some sturdy replies which has been put together in a series of statements and rejoinders from Prof. Derr and his critics. The final contribution is an excerpt from a major new study of man, nature and creation by Father Paul Verghese, writing from an Asian and Orthodox perspective.
- The paper presented by Prof. Charles Birch and Prof. John B. Cobb, Jr., entitled "God's Love, Ecological Survival and the Responsiveness of Nature" has been sent to us as a preparatory paper for the 1974 Conference on "Science and Technology for Human Development". This Conference bringing together about 120 scientists, social scientists and theologians from all over the world will meet in Bucharest, Romania, from June 24th to July 2nd. It will be the concluding World Conference of the Five-Year Ecumenical Inquiry on the "Future of Man and Society in a World of Science-based Technology". Further preparatory papers will be published in the next issue of *Anticipation*.

Finally we include the description of Topic VI for the Assembly which gives our readers a preview of the way in which the issues of technology, development, and the future of man and society will be dealt with in the Fifth Assembly of the World Council in Jakarta, Indonesia, in 1975.

Paul Abrecht
Peter Scherhans

A THEOLOGICAL CRITIQUE OF SCIENTIFIC RATIONALITY

Report of an Ecumenical Working Party

Introduction

A small working party on Science and Theology met in Zurich, 29 June – 3 July 1973, under the auspices of Church and Society. There were about 18 participants from the fields of theology, ethics and the sciences.

What follows is not a consensus report, but it does point to the main issues considered by the working party:

I. The Relation of Theology to Ethical Decision-Making

II. Quality of Life – Criteria for Measurement

III. Nature, Social Justice and the Eschatological Future

I. The Relation of Theology to Ethical Decision-Making

One of the challenges which confronts any Christian attempt to assess the technological society or the sciences which undergird it is that of specific contribution. What can be said from a Christian perspective which is not already accessible to common sense? Why separate ourselves from humanists, whose goals we share, by using theological language which seems to them obscurantist?

At one level of response to this challenge we might say the question is wrongly put, that we must not ask ourselves why we are unique, as if we had to prove ourselves better than other men; nor should we heed the demands of others that we justify our right to speak in our own way for our own reasons. Our vocation *is* to speak out. If others do so also, well and good; but we are not allowed, by our commitment to the Gospel, to abdicate our responsibility to bear our own witness.

But at another level it is important that we make clear the particular Christian bases for our judgements. For one reason, we suspect that much of what passes for 'common sense' is in fact derivative from, and in unacknowledged continuing dependence on, the Biblical tradition, and likely eventually to fail if the religious sources from which it springs are not continually articulated and renewed. For another reason, ethical judgements on science and technology are in fact rather varied, not simply obvious. As we cannot, for religious reasons, share all possible viewpoints, it becomes important to say what we do accept, and why.

Still a third reason for articulating our concern as Christians is that so often the Church has been, and still is, in silent acquiescence with whatever technology may bring. It is at least harmless to these modern 'powers that be' if not in full complicity with those technological forces now under attack by ethically sensitive persons. Whether in the past the Church nurtured scientific inquiry and welcomed technological change, as happened in some eras and societies, or whether it stood against these new developments, as occurred in other times and places, today it seems nearly everywhere to have bowed before the technological temper. For too many new problems it has no directly relevant words.

To be sure, it cannot always be blamed for being unprepared to speak. The pace of change is such that mankind has been continually surprised by the consequences of scientific possibilities. New problems are created when the hitherto interactable becomes doable, when what was once received as fated and given becomes something that can be changed, as has happened for instance in the growth of medical knowledge and technique. Theology is not to be faulted for not preparing the world to face the new ethical questions thus raised, because no one, Christian or non-Christian, could have thought about these matters in advance of their occurring. The problems were unavailable to thought, the questions literally inconceivable. So when we speak ethically today we are inevitably trying to make up deficiencies, and there is always a contemporary need for whatever sound guidance we can offer the world.

The difficulty in trying to keep Christian judgement abreast of scientific and technological change points to a factor in the nature of theology itself which affects the way we speak as Christians. Theology is not so much a system of fixed truths as it is a way of thinking, just as science itself is a way of thinking rather than a body of conclusions. Theology is reflection, in symbolic language, of the meaning of faith for particular situations and circumstances. Its content is to a great extent variable, so that a theological statement made in one context may be inappropriate in another. In its form it is usually directed *against* some other possibility it wishes to negate; and as the danger which gave rise to it recedes and is forgotten, the statement may lose its significance. Even the symbols it uses may not function adequately after a while, and require rethinking. To speak theologically, then, to problems raised by science and technology is more a matter of articulating faith's insights in the present than of elaborating previously-determined conclusions.

If, for example, we address the concrete question of what genetic changes may be deliberately induced in man, we find that we cannot with any certainty draw a clear line beyond which changes could not be countenanced by the Christian conscience. But we can speak of that in man which is special and inviolable, whose removal would make him no longer man. If he were deprived of his freedom, became an automaton, he would lose the 'image of God' which we might define, from Christian perception, as his capacity to enter into genuinely mutual relations, or his 'potential to be like God'. The desirability of any changes would be judged by their effect on this judgement of faith; and this would be the ultimate guideline with which we would supplement the ordinary prudential wisdom that one should not risk changes whose outcome is uncertain.

To take another example, if we speak of the proper treatment of the natural world, we cannot say explicitly as Christians just what technologies would be ecologically wisest. But we can say that the physical world must be respected as the creation of God, that its value is reaffirmed by the Incarnation, and that its continuing care is entrusted to man as God's steward. From such affirmations it would follow that methods of resource use which destroy the capacity of the earth to flower, to renew itself, and to support human life deserved condemnation by Christians – and precisely for these theological reasons. Here again, theology must accept movement, change and disagreement within stated parameters, but rules out certain actions, in this case certain treatments of nature, which fall outside these boundaries.

Other examples could be easily added. We do not know from Christian faith what forms of technology will be viable in the future, but we do know, thanks to the liberation that is in Christ, that technology must not be permitted to serve oppression. We can know future patterns of life in scarcely any detail at all, so that it becomes impossible to adopt any long-term social policy with confidence. But we have a hope for the future, grounded in our trust in the divine faithfulness from generation to generation, that gives us the courage to risk concrete action programmes which today seem to us responsible, even though only God knows what will become of them in the end.

In all examples the warning and the duty both remain: always be prepared to question the finality of theological judgements, but never hesitate to make them, with the best Christian insight and sensitivity possible.

II. Quality of Life – Criteria for Measurement

The concern for the 'Quality of Life' as a truer measure for development comes up either as an alternative to parameters now in use like GNP, which is a quantitative measurement of the total goods and services produced in a country, or as a corrective to them. There are some, particularly among the developing nations, who do not as yet see fit to abandon the criterion of GNP until they have achieved a minimum subsistence level of production of quantity of goods. They would therefore see QL as a corrective to GNP but not as an alternative.

An alternative parameter, which retains all the positive values of GNP but goes beyond to include the demands of distributive justice, so desirable in many developing as well as developed countries, is Net Economic Welfare. In NEW, parameters are devised for measuring the quantum of protein consumed or energy utilized per capita in the lower percentiles of the economic ladder; how many years of schooling or how much medical assistance is available at the lower economic levels of the population, and so on.

The proposed shift from GNP to NEW can only be welcomed insofar as it purports to take into account the demands of distributive justice in each nation. It is however inadequate for two reasons at least. First, NEW cannot take into account the demands of international economic justice, which is very much at the root of poverty and suffering in the world today. How much of the wealth of each country is derived from an unjust exploitation of the raw mate-

rials, labour or markets of other countries? To what extent is the quality of life in a particular country so low because of its extractive (minerals and fuels) or agricultural (tea, coffee, rubber, spices, etc.) industries being unjustly exploited by outside forces or by its economy being sucked dry by contract obligations in the area of loans, aid or foreign investments? Insofar as NEW fails to measure these factors, is it an adequate index of development? Secondly, NEW remains basically an economic parameter; and there is wide agreement today that the quality of life cannot be measured in economic terms alone, though economic parameters have an essential role in measuring the development of an improved quality of human life. Not only does NEW fail to give valid criteria for measuring the degree of international economic justice being achieved – something essential to the quality of life on our globe. It fails also to give indices for dealing with the new threats to human life from the pollution of air, land and water, from the approaching exhaustion of the planet's limited resources of fossil fuels, metal ores, fresh water, arable land and timber, of the proximate limits of the planet's capacity to support an exponentially growing population, and of the speedy deterioration of human relations in our large urban complexes.

But to go beyond NEW seems difficult at least in two different respects. As we go beyond to the qualities of life that have to do with human attitudes, capacities and relations, measurement becomes exceedingly difficult, and more and more imagination is required to integrate these values into national or international planning. The second difficulty relates to the problem of motivating peoples, both in the affluent countries and in developing nations, to make the necessary changes in their present or projected standards of consumption. To what extent would people in affluent lands accept the judgement of Meredith Thring in the *New Scientist* (March 1973) that 'it follows with considerable certainty that the GNP per capita in the rich countries must come down to less than half the present figure as that in the others rises to equality'? To what extent can the poorer nations be dissuaded from their suspicion that this shift away from GNP precisely at this moment is a way to keep the poorer nations from coming up to the western standard of living?

There are certain parameters already available for measuring the quality of life beyond NEW. On the negative side high rates of suicide, crime, alcoholism, drug addiction and mental illness are indicators of a low quality of life; to the same category belong pollution level, resource utilization patterns, population agglomeration and the development of a technology adapted to facing some of the problems posed by these.

Slightly more difficult to measure, but still capable of investigation and judgement is the following set of criteria which affect the quality of life generated by societies:

a. The quality, orientation and variety of options available to all people in education and culture.

b. The capacity of the health services in a country to promote total health of the community; the degree of preponderance of benefits over harm produced by the medical system.

c. The arrangements in any society to care for the aged, orphans, lonely, refugees, migrant workers, new immigrants, the physically and mentally handicapped and all others in need of help.

d. The opportunities existing in a society for the utilization of leisure for relaxation, recreation and cultural creativity.

Yet another set of criteria, perhaps equally difficult to measure precisely belongs also to the realm of personal and social values. These criteria are practically useless unless worked out in terms of viable social-political alternatives but this can be done only in each particular context:

a. **Anti-social egoism as opposed to a commitment to live and work for the benefit and welfare of all.** One has to be careful in the analysis here, for the demonic element in the former seems obvious, while the latter can be demonic by concealing hidden manipulation of society and persons. At this stage of human development, however, the parameter has to be weighed in favour of pro-social attitudes and against a system that promotes selfishness and egoism. Here a fresh debate on the profit motive, and on the primacy of the economic factor, seems to be called for. Equally important is a new debate on individual versus society.

b. **Acquisitive greed as opposed to a desire to create in order that we may have wherewith to serve all.** This is a clearly biblical value. 'Let the thief no longer steal, but let him work so that he may have wherewith to contribute.' Are our economies dependent upon growing appetites for consumption, and do they therefore, through packaging and advertising as well as through other sales techniques, foster greed and acquisitiveness? Do they appeal to vanity and cupidity, sensuality and pride (the basic sinfulness of man is expressed through these) in order to promote their sales? To the extent to which they do, the Christian has to regard these as negative indicators of the quality of life in a society. Can we have a society in which creativity becomes free and in the interests of all humanity, and not geared to the price-tag of that which is created? We are now in a time when

consumerism has already become overgrown in many societies, and we may need to find ways and means to restructure society in order to cut down advertising, packaging and salesmanship and mitigate the appetite for consumption.

c. **Aggression as opposed to a willingness to accept and assist the other.** A culture that needs to build up its military power and engage in acts of aggression all over the world to protect its own interests is definitely low on the scale of the quality of life. A society in which citizens are taught to think of non-nationals as people to be accepted and assisted as fellow-humans has a higher rating on the QL scale. One can watch the educational system and the mass media to evaluate the attitudes they engender towards the rest of humanity. One can also study how the anti-values of aggression and violence are taught by the text-books, and the media. The opposite of aggression however is not docility and placidity. A certain measure of aggressiveness directed against violence, oppression and injustice, can only be positively evaluated. This is what makes the parameter so difficult to make precise.

In the previous section the attempt was to choose between opposites. There are other qualities where the opposites have to be held together in a healthily balanced tension. Here measurement becomes almost impossible; parameters are hard to devise. The mutually opposed values themselves need to be further elaborated in terms of practical choices before a society. The attempt here is merely to pin-point them through the use of catch-words – not to list them exhaustively or to describe them adequately:

i.	Structured control	versus	creative freedom
ii.	Sufficient variety	versus	regulative norms
iii.	Scientific rationality	versus	intuitive spontaneity
iv.	A degree of contentment and satisfaction	versus	impatience
v.	A sense of security	versus	a willingness to take risks
vi.	A measure of comfort	versus	the capacity to endure hardship
vii.	Privacy and personal freedom	versus	a sense of responsibility for the public good
viii.	Self-reliance and self-assurance	versus	openness to other persons and cultures
ix.	Simplicity of life	versus	having the technical facilities for a creative life
x.	Closeness to nature	versus	being at ease in a technological world

In devising parameters for measuring the quality of life one has to beware of the naïveté of a simple utilitarian ethic based on a pleasure-pain scale. The increase of pleasure and the decrease of pain by themselves do not make a society more human, though the avoidance of needless suffering and the promotion of peace and joy are properly Christian values The overcoming by faith of guilt, anxiety and boredom, the generation of a clear conscience, hope and the celebration of life in joyous exultation, the fellow-feeling and the sense of participation in a common life induced by genuine love, are all qualities of life which the state can only partially achieve in society. The Church will still have a direct role to play in the area of faith, hope and love, which it cannot abdicate to the state.

The quality of life can be computed in terms of a cost-benefit analysis, provided neither the costs nor the benefits are reckoned in purely economic terms. There are certain moral choices in life which do not readily lend themselves to social legislation or social engineering, but have to remain in the realm of personal decision. But many moral choices are of a social character, patent of mathematical planning and political enforcement or cultural inculcation. Technology itself can play a positive role as the servant of man in:

a. monitoring moral defects in society such as pollution level, resource depletion and population agglomeration;

b. devising technologies which can remedy social ills;

c. devising techniques of educating and motivating people for taking the necessary decisions to remedy such ills, and

d. positively articulating patterns of life that will eliminate several of these social evils.

All that has been said so far gives rise to two other related questions. If one takes a minimum subsistence level of consumer goods and certain other values as essential to the desirable quality of human life, what about Jesus Christ, the Son of Man who had nowhere to lay his head, whose life-expectancy was sub-standard, who was a victim of the gravest injustice, and who yet lived a life that was not only fully human, but is regarded by Christians as in some sense normative for all human existence? It cannot be denied that more fully human lives are sometimes lived out in the midst of oppression and deprivation, poverty and imprisonment, than in the midst of a society which provides persons with the ideal setting for the full development of their human potential. The monastic ideal at its best has sought to bear witness to a transcendent quality of life in spite of the setting provided by society. There is no reason to assume that this type of witness will be rendered obsolete as the quality of life goes up in societies. A new set of values can break into society often only through a committee group embodying those values against the trends in society. And this will probably remain the case as long as time lasts. Even today freedom has to be granted for persons and groups to manifest their vision of the Kingdom of God through a life of voluntary poverty, ascetic simplicity and a life of contemplation or service which makes but scant use of technology. These values, however, cannot be imposed upon society by social legislation.

The second question relates to the highly temporary, provisional, and limited value of any parameters devised for measuring the quality of life. The irrepressible freedom of man is at any time apt to rise up in protest against any standard externally imposed and politically enforced. That too belongs to the quality of life of man created in the image of God, free and transcendent.

III. Nature, Social Justice and the Eschatological Future

The contemporary substantive question for a theology of the future is: what is the relation between Christian hope for the historical future and what science says about the planetary crisis of natural resources? How is that pending crisis of resources related to the promise of God's *new* in the future? Can 'hope' for the future so basic for Christian faith, be realistic and credible in the face of the ecological crisis we seem to face? Can a futurist theology, related intrinsically to the *historical* future, continue to be either credible or consistent within itself if it is related only (as it has been in the past) to its grounds in the Biblical tradition, ignoring the limitations imposed by *nature's* future probabilities? If history exists in nature, and if society depends essentially upon the natural resources of earth, can a Biblical theology speak of a 'new' in politics and history if there are to be no natural resources to count on? We do not here assume the accuracy of the many gloomy ecological prognostications. We do, however, recognize that they are weighty enough to pose a serious problem not only for our political and economic planning but also for any theology concerned with society's future history. Clearly the 'unlimited' resources of nature which both progressivist *and* eschatological futuristic theologians had assumed for the future (the continuing 'given' of a natural environment sufficient for the needs of a just society) have turned out to be more restrictive than we had realised. Ironically, there seems not to be enough promise of 'continuity' in nature from past through present into future to make possible the utterly 'new' world we had hoped for, or at least to make that world uncomfortably problematic! Any theology of the future must take account of this if it is to be relevant and credible on the question of human hope.

Theology (even a Biblical theology) must therefore concern itself with nature's future in giving account of the hope that it holds for the human, the social and the historical future. Its legitimate concern for justice and liberation in society (and so in history) must include a corresponding concern for the resources of the new world and so for the relation future technological man is to have to his natural environment – as well as a concern for the quality of man's life in a future technological society. God's world in the future must contain not only a redeemed and so just social order. It must also include a *nature* with enough integrity and resources to support humanity in such a new social order. For human fulfilment requires a 'living' nature no less than a just social matrix. Liberation as well as creation has deep and essential relations to nature and to God's continuing activity in nature.

The first question logically is that of method. What is the relation between scientific inquiry, technology and theological method: metaphysical or Biblical? This question is crucial, not only in principle, but because it is evident (in what follows) that the question of the relation of God and man to *nature* – as well as to society and history – is central to a theology concerned with man's future in history and so on earth. Hence theology must take account of what man's inquiry knows of nature's future, and so of human society's future on this planet. As man's life in the historical future will still be lived out in nature and dependent on nature's resources, so a theology of man's historical future must be correlated with (if not based upon) what man knows of nature's future. The methodological question of theology and its relation to science – and so to philosophy of science and to a philosophy of nature – is unavoidable.

This implies a new orientation for theological discussion of every basic theological doctrine or symbol, an orientation directed not only to what the 'new' God is doing in the future of *history* but also to his activity in the future of *nature*. Theology's doctrines of God and man must be reconceived in relation to nature, to her value and integrity, and to her resources. A prospectus of such a new orientation for theological discussion is as follows:

a. Creation, providence and eschatology in relation to the becoming, the continuance and the future of nature. God's creative activity in relation to nature, in past present and future, must be theologically reconceived – as current theology has reconceived God's relation to history's past, present and future.

b. What does 'liberation' mean in relation to depleted resources and how are we to understand social redemption in this life in relation to nature's future (redemption in the next life avoids this problem, to be sure, but any conception of a *historical* redemption or liberation does not avoid it).

c. What is the Kingdom, insofar as it *is* historical at all, in relation to a technological society (in all its possibilities and its threats for the Kingdom) and in relation to a potentially depleted earth as the sole base for future society?

This raises the important question of the 'quality of life' in the Christian vision of the future of man, now conceived not only in relation to issues of justice, but also in relation to technology, natural goods and necessities, depleted resources and a falling GNP – and in relation to a just distribution of depleted natural resources.

d. How does Christian responsibility for social justice to the *contemporary* poor relate to Christian responsibility for justice to *future* generations? If we believe that 'God's being is future', and that our own orientation must be to that future, we cannot ignore in our ethics the claims of future generations on nature's resources. What is the relation of these claims to the vast and rightful demands made by the present population of the world on such finite natural resources?

e. Ideology: the coherent praxis or intelligible goals and strategies of Christian faith with regard to action relative to society's present and future. What is the relation of such Christian praxis to the problems of ecology and nature's resources, and how is it related to our concern for social justice? How, in turn, are both concerns related to the *different* situations of present societies vis à vis technological development, affluence, political and economic power, and so on?

Our main theme is to call theology's attention to the problem of nature as well as to the problems of society and of history. As we have tried to show, neither history nor nature can be theologically conceived except in relation to each other. This intrinsic interrelation is especially evident when the future of nature seems to threaten the future of history. A theology based on hope for history's future and on man's promised liberation in history cannot be intelligibly grounded, inwardly coherent or genuinely hopeful without at one and the same time providing and explicating grounds for hope in nature's future.

THEOLOGICAL REFLECTIONS ON THE BAMBOO ROOM AND THE OIL ROOM*

Kosuke Koyama

I. Introducing the "curved liturgical mind" and the "straight technological mind"

The Kuching museum in Sarawak is one of the best in South East Asia. As you enter, a large glass showcase of colourful tropical birds with unusually thick, long, curved beaks greets you. The second floor is full of bamboo arts and crafts in which bamboo has been woven into many curved shapes. There is a display of model animal, fish and bird traps made only of bamboo and wood – no metal! In these, bamboo is used in the most imaginative ways, indicating the decisive superiority of human over animal intelligence. Traps constructed of bamboo do not give a cruel impression at all. An animal may walk in to have an afternoon snooze.

As I see all these graceful curves, I remember the mighty curves of the Sarawak rivers that fascinate your imagination when you fly over them. And the curves invite me to begin a spiritual journey, to return, as it were, to the elemental structures of the human psyche itself. They relax me. They comfort me. They whisper to me. They embrace me.

There is one room in this museum (on the ground floor to your right as you enter) which plays completely different psychological music. It is called the Oil Room, and it contains several kinds of off-shore and inland oil drilling models. "Developing Sarawak" the signboard proclaims. I am suddenly surrounded by highly technological equipment: drills, shafts, gears, diesel engines. I regret that I walked innocently into this room after such a lovely spiritual embrace and dialogue in the Bamboo Room. My mental tranquillity is disrupted. Looking at those drilling models – still completely at a loss how to relate the mind of the Bamboo Room to that of the Oil Room . I can hear the thunderous noise and smell of the polluted air, and see the smile of (white, technological) men whose bank accounts are steadily increasing.

I take a deep breath as I come out of the museum. It is a "schizophrenic deep breath". Beautiful blue sky and tall coconut trees outside the building urge me to digest what I have seen – the dangerous and confusing contrast between the two rooms. The two rooms have sparked off once again the continuously irritating question with which I have had to live for some time. Let me try to describe the psychological impacts of these two "historic" rooms.

The Oil Room expresses the human mind which is (1) *straight* (look at the long, straight steel shaft); (2) *fast* (look at the power of the engine that rotates the enormous iron mechanism); and (3) *self-assertive* (look at the sharp, aggressive drill head).

The Bamboo Room represents an almost exactly opposite type of human mind which is (1) *curved* (look at the graceful curves of the bamboo bird traps); (2) *slow* (look at the models of canoes and paddles); and (3) *dialogical* (look at all those bamboo products blending harmoniously into the surrounding nature).

The curved, slow, dialogical spirit is the indigenous spirit of Sarawak. Here mother nature is curved, slow, and dialogical. Her self-understanding is curved, slow, and dialogical. Her history is curved, slow, and dialogical. The Sarawak man, in his appreciation of the relationship between his spirit and the outside world, does not go in a straight, fast, self-assertive direction. He goes, on the contrary, in the direction of animism (curve), symbolism (slow), and integration (dialogue).

The animistic mind sees the world (mountains, trees, stones, water, birds, fish, and so on) as a living reality with many active personal souls. This mind makes the world fascinating with imaginative mythologies and symbols which are indicative of careful reflection in the community over a long course of time. The animistic mind does not behave in a straight action-reaction with man, nature, and the gods. It goes through a curve made up of a variety of mediums. It makes an indirect approach as it travels. Souls, both human and others, are contacted personally (curve) and not mechanically (straight).

* This paper was presented to the Asian Christian Conference on the Scientific, Technological and Social Revolution in Asian Perspective, Kuala Lumpur (Malaysia), April 1973.

Secondly, wherever the human mind is at work, it frames symbols. Symbols, once created by man's mental and spiritual insight, demand that he become mentally passive and receptive in order to re-understand and re-appreciate them. The fast mind often fails to touch the depth of symbolic messages. Symbols demand that man take time (go slow) to appreciate them. No symbol can be appreciated in a moment.

Thirdly, the mind represented in the Bamboo Room is constantly engaged in communication with the spirits of the world. Lively, ceremonious dialogue is always going on. This mind is not lonely. It has many companions 24 hours a day. It is a community mind and it is community-minded. It finds its fundamental meaning and structure in an empirical appropriation of oneness with man, world, and the gods. It fears any fragmentation or partial experience of life. It desires to see man as one integral totality in the totality of the cosmos. Totality is a dialogical concept. Dialogue is a totality concept. Happiness of the whole is the perequisite for the happiness of the individual. One cannot enjoy private happiness apart from total cosmic happiness.

The Bamboo Room briefly conveyed these messages to me. As I was strongly impressed by the visual curves and their psychological implications, I decided to refer to the spirituality behind the displays as curved-spirituality. Curved-spirituality means the curved-animistic, slow-symbolic, and dialogical-total mind. This spirituality must not be a monopoly of Sarawak. On the contrary, I feel it belongs to the deep stratum of human spirituality. I am using the loaded word "spirituality" in the straightforward original sense meaning that there is such a (curved, slow, dialogical) wind blowing within man's soul.

My observation of curved-spirituality was in fact stimulated by the strong impression the Oil Room imprinted on my mind. I felt the Oil Room was a threat directed at me personally. Was it because I had just finished my reading of the engrossing *Only One Earth, The Care and Maintenance of a Small Planet,* by Barbara Ward and René Dubos?

I am not suggesting that the Bamboo Room and the Oil Room indicate only positive, constructive values for man. They signify simultaneously negative, destructive values. The Bamboo Room suggests damaging superstitions, inhuman practices, and unenlightened methods of producing the necessities of life. The Oil Room suggests that destructive power is upsetting the ecological balances of this planet.

The Bamboo Room, like the Oil Room, is a technological room. A trap made of wood sticks and bamboo is an achievement of science and technology. Yet, on the message level, there is a significant difference between the two.

The Oil Room does not present the best image of the technology available today. Instead of the Oil Room, there should have been a DC-8 Jet Room with shining model aircraft. Yet, even in the context of the ugly image of the technological drill, something can be said about technology in general. May I do this by explaining a little further my three points.

The technological spirit is *straight.* Since there are so few straight objects in the natural world, there is something artificial about a straight mind. Straight signifies efficiency. Artificiality and efficiency are the two major expressions of the technological mind. Man flying at 600 miles an hour at an altitude of 33,000 feet is both artificial and efficient. The un-artificial and in-efficient man is destined to walk on land at three miles an hour. When man's kidney deteriorates, technology comes with the dialysis machines, and artificially and efficiently cleanses the blood. B-52s can destroy land and people artificially and efficiently with the enormous quantity of bombs they are capable of carrying.

The technological spirit is *fast.* It is fast in the sense that it does not try either to deal with or to express the comprehensive truth about man. It is not concerned with totality. It works in specific areas with specific subjects which carry specific meanings for human life. A washing machine is a technological blessing for housewives. It takes care of the laundry. Its contribution is specific. An automobile serves in the specific area of transportation. A printing press works in the specific area of printing. Since these technological devices work in specific areas, they can work fast. The recently opened Hong Kong – Kowloon submarine tunnel is a magnificent technological achievement. Its contribution is in the specific area of transportation. It enables vehicles literally to travel fast. The 38th parallel that divides South Korea from North Korea is a straight fast line. In that sense it is an artificial and technological (politico-technological) line. No one expects technological achievements like a washing machine, an automobile, a printing press, or a tunnel to solve human problems. They solve only specific problems. They are compartmentalized (partial and fragmented) achievements. They can accumulate but they are unable to integrate themselves creatively to produce human meaning. A washing machine plus an automobile plus a printing press plus a tunnel (plus other innumerable technological products) do not and cannot cover a total and profound human need and meaning. The technological mind also finds itself unfamiliar with and incompetent for this kind of task.

The technological spirit is *self-assertive.* Since it is free from the concern for how its creations affect the total inner quality of human life, it can behave in a distinctively self-assertive way. Let me illustrate this from Rangoon, Burma. Shwedagon Pagoda stand on Rangoon's Singuttara Hill. It was built, tradition says, to enshrine the Eight Sacred Hairs of the Buddha which were given personally to the faithful visitors from Rangoon. The gold pagoda is a marvel to view from nearby as well as from a distance. Visitors are required to remove their shoes and socks at the foot of the hill. ("... put off your shoes from your feet, for the place on which you are standing is holy ground" – Exodus 3: 5). The approach itself is in the sacred territory of the Eight Sacred Hairs. Every barefoot step prepares man to come into the presence of the holy. Every step is a liturgical step. The time you spend walking up the hill is liturgical time. The sweat you feel on your forehead is liturgical sweat. These liturgical steps, time, and sweat – curved, slow, dialogical – are there, from older times, as the best possible arrangement for man's approach to the holy. This is what I mean by the liturgical mind. Recently, however, a vertical elevator was built to lift visitors to the top of the hill, where the pagoda stands, in less than a minute. They find themselves in a cubicle which goes up straight, fast, self-assertively. This is what I mean by the technological mind. The only liturgical element persisting is bare feet. Bare feet in a fast-ascending elevator arouse a queer feeling! They are a symbol of the presence of liturgy in the technological way of life. The technological mind asserts itself, challenging directly the historic meaning of the liturgical approach to Shwedagon Pagoda. It does so even at the expense of destroying the time-honoured sacred view of the great pagoda.

II. The Challenge of Adjustment

I perceived the presence of a contrast between the Bamboo Room and the Oil Room, and I was stimulated to discover the reason why this contrast disturbed me personally. It has to do with the uneasy co-existence between the realities shaped by these two minds (barefoot-liturgical feet in the elevator-technological box).

I have been speaking about the human mind, human spirituality, the liturgical mind, and the technological mind as though I knew exactly what they are. I must confess that I do not. I cannot define them. The concept of definition is too rational and cannot be applied to the nature and behaviour of *wind* (spirit). ("The wind blows where it wills and you hear the sound of it, but you do not know whence it comes or whither it goes; so it is with every one who is born of the Spirit" – John 3:8). I feel that the wind in return in its own way almost defines me. In this specific sense I am an animist. Among several strong winds blowing today, these two – the liturgical wind and the technological wind – are creating an atmospheric low pressure area. I feel a desire to eliminate this atmospheric low pressure area. Some critical adjustment has become inevitable.

Should I make an adjustment to live in the purity of the Bamboo Room message? The liturgical characteristics of the Bamboo Room are not unfamiliar to me. They are an expression of that which is deeply myself. I would be freed from turbulence if I resolutely and continuously fell in love with the message of the Bamboo Room. In order to do so, I would have to shut myself off from the aggressive message of the Oil Room, perhaps equally resolutely and continuously. Should I make an adjustment to live in the purity of the Oil Room message? The technological characteristics of the Oil Room are also attractive to me personally. Did I not feel fascinated when I drove through the Hong Kong – Kowloon submarine tunnel at 50 miles an hour? Have I not been impressed with the life-saving performances of the dialysis kidney machine? Technology is also an expression of that which is deeply within me. I would be freed from turbulence if I resolutely and continuously fell in love with the message of the Oil Room. In order to do so, I would have to shut myself off, perhaps equally resolutely and continuously, from the unenlightened and premodern message of the Bamboo Room. Obviously both possibilities are impossible to realize. I cannot make myself free from either message. With all their positive and negative implications they are deeply within me.

Should I make an adjustment to live in a compartmentalized arrangement: one compartment for the curved mind and another for the straight? Between these compartments, there would be words of greeting such as "Good morning" and "Good evening", but discussions and debates would be discouraged. This *is* a peaceful arrangement. Japanese people – and I am one of them – present an outstanding example of this compartmentalization. They are strongly curve-minded. Listen to their curve-full (subtle) language! Study their stories slowly played out on the Kabuki stage. Examine their dialogue with the spirit of tea in the tea ceremony and with the spirit of flower in flower arrangement. Yet they are perhaps the most technological straight-minded people in Asia. They are building earthquake-proof skyscrapers in the land of once-a-week earthquakes. Electronics has become a part of their way of life. There is a realistic move to make the whole land an Information Land.

I know personally a computer engineer who copes with his curved-mind and straight-mind by compartmentalization. In the day-time, he wears a western suit. In the evening at home, he wears a kimono. Just before supper time when he changes from a suit to a kimono he walks from the Oil Room to the Bamboo Room. He does this routinely throughout the year. This attracts and even fascinates me. I feel he is enjoying the best the two rooms can give him.

I notice, however, that the natural way with which he handles this compartmentalization derives not from his straight mind but from his curved mind. The relationship between the Bamboo Room and the Oil Room is regulated by the Bamboo Room mentality. It is a curved, slow, and dialogical relationship. This may be the reason why Japan is saved from mass production of people afflicted with schizophrenia.

I find myself generally in this situation. Perhaps the only difference between this computer engineer and myself is that I am doing consciously what he is doing naturally. I receive messages from these two Rooms. These messages, even though perceived and formulated intuitively, demand a conscious adjustment. I achieve this, as the engineer does, by making the curved mind an agent of the relationship between the two. Why do I make the curved mind an agent? It must be because, even though I enjoy the fruit of the straight, fast, self-assertive mind, I am not a technological man. I find meaning in the Oil Room only through the Bamboo Room. The Bamboo Room, to use an awkward image, provides the digestive juice so I can get nutrition out of the Oil Room, and not the reverse.

III. Two minds at the Lord's supper

I find that I am traditionalist. I seem to be unable to relate technology and liturgy by making the technological mind a mediator. On the contrary, I feel at home interpreting technological development and what it means to me through the frame of mind which enjoys and appreciates Nô plays or flower arrangement. For me, the mind which is straight, fast, self-assertive cannot become a mediator. This, I must admit, is my personal limitation and disqualifies me from becoming a technological man. How can I appreciate 600 miles an hour at an altitude of 33,000 feet through the mind which is at home with the notably slow movements of the Nô play? Obviously I do this in my own way.

First, I ask: which mind, curved or straight, is more human? Which speed, slow or fast, is more human? Why do I ask these questions centered on the concept of the human? I simply want to know how these two kinds of mind contribute to my being authentically human. I have observed that these two minds are expressions of the human mind. This, however, does not mean they participate in building a meaningful life for me.

What do I mean by human in this context? By human I mean a human relationship with other humans. By the sub-human, I mean a sub-human relationship with other humans. By the inhuman, I mean an inhuman relationship with other humans. By more human I mean a better human relationship with other humans. By less human I mean a worse human relationship with other humans. I realize that a human relationship with other humans does not explicate what human is. Yet it helps me a great deal to understand in my mind what human is. I take special note that I cannot think with excitement about an isolated human. I don't see any other realistic starting point for thinking about the human apart from this tautological human relationship with other humans. What is human relationship then? It is the most basic and crucial relationship man knows. Man is born into it, lives in it, and dies in it. Apart from this relationship, man is threatened with the loss of his meaning, his spirituality, and his being. It is in the context of this relationship that the liturgical mind and the technological mind must find themselves, and in the light of this relationship they should be examined. Does the curved, slow, dialogical mind, or the straight, fast, self-assertive mind contribute to promoting better human relationships? Here, once again, I reflect upon human relationship. It seems to me that the presence of suffering is necessary to create and sustain human relationship. Elaboration of the relationship between suffering and human relationship is beyond the scope of this paper. Yet I must venture to make one humble observation at this point. I wish to do this by quoting from one of the greatest chapters of the Bible – Isaiah 53:

> *Surely he has borne our griefs and carried our sorrows; yet we esteemed him stricken, smitten by God, and afflicted. But he was wounded for our transgressions, he was bruised for our iniquities; upon him was the chastisement that made us whole, and with his stripes we are healed. (vv. 4,5)*

This quotation is a part of the fourth Servant Song, chapter 52:13 to 53:12. The Servant Songs have presented scholars with a difficult exegetical task. Their careful treatment must be consulted. I see here one of the profoundest expressions of the theology of Israel. This Servant Song is a historical theology based on historico-theological expe-

rience. It is not a theory (possible apart from history) but theology (impossible apart from history). The poet of the Servant Song points out in the most moving language the mysterious healing effect of suffering for others. Why "with his stripes we are healed"? This will defy rational explanation to the end of history. It is a theological truth which grasps us instead of us grasping it. It is the language of the grasped relationship between God and man, and man and man.

I see in the darkness of night the light. Suffering for the sake of others can have a profound – not a superficial – healing effect. I see the light, I say. I do not understand it. The light makes me see the light. I see that suffering for others does create new humanity ("we are healed"). New humanity is the new human relationship. May I say that, in accord with the tradition of the Christian Church, Jesus Christ creates the new humanity through his suffering? That he creates the new human relationship? Isaiah 53 is not a peripheral message, but finds its place in the heart of the Gospel of Christ. The message of "with his stripes we are healed", creating the grasped-relationship, expresses the redemptive mind of God directed to the human relationship. Human relationship is no longer simply human relationship. Human here is the human to which the divine is directed. *In Jesus Christ God lives within human relationship.* His life is redemptive. His life provides amazing resources. The value that the Christian message brings to man is that through the suffering of Jesus Christ, the Son of God, man (human relationship) is healed. This living of the Son of God in the human relationship is the theological point at which the curved, slow, dialogical spirit of the Bamboo Room and the straight, fast, self-assertive spirit of the Oil Room must be tested.

I ask: is the mind of Jesus Christ, which through suffering creates the new humanity and the new human relationship, curved, slow, dialogical, or straight, fast, self-assertive? Which mind is participating more in the suffering that builds up human relationship?

The history of the people of Israel, its complex, strange, God-led history – or the awareness of its own history – seems to me more in character with the curved, slow, dialogical, than the straight, fast, self-assertive mind. When God meets man, his forgiving grace saves man instead of destroying him. God makes divine theological curves because of his love. Forty years in the wilderness, and three generations of the united monarchy (Saul, David, Solomon), and twenty kings of Judah (up to B.C. 587), and nineteen kings of Israel (up to B.C. 722) and the experience of exile and restoration – isn't this rather a slow way for God to let his people know the substance of the covenant God-man and man-man) relationship? Isn't this too dialogical? Too dialogical, therefore too inefficient? This slow process comes, symbolically speaking, to a theologically laden full stop in Jesus Christ. Crucifixion implies cruel immobility. He cannot make any motion at all. He is nailed down. Yet in being nailed down (suffering), he creates the new humanity and new human relationship. Is it true then that the God who is history-minded, the God who speaks to man in history, the God who is faithful to the historical covenant relationship, is portrayed in the Bible more in the image of curved, slow, dialogical, than in that of straight, fast, self-assertive? I must say that I do not understand what is precisely meant when I say God's mind is more curved, slow, dialogical than straight, fast, self-assertive. I am only pointing to the realm of meaning where my theology breathes.

To me history has a curved, slow, dialogical mind. It may also have a straight, fast, self-assertive mind. For my part, I try to see the structure and meaning of the latter through the former. Since I do this, I feel more at home when I find God in the context of the former than in the latter. Am I limiting God and thus speaking blasphemous words? The development of technology thus brings me to the possibility of blasphemy. So far theology has tried to speak of the curved, slow, dialogical God. From now on, owing to the change brought into the human mind by the unprecedented progress of technology, should theology change its basic orientation and address itself to the straight, fast, self-assertive God? Is the technological mind asking such a fundamental theological question? Technological advance does affect man. Does it affect God? Will it change God? His character as faithfulness, forgiveness, love? Will technological man understand the biblical God so qualitatively differently from the liturgical man? Will there be a critical discontinuity between them? Misunderstanding between them?

Or will God be affected only in this sense that "I have seen the affliction of my people who are in Egypt, and have heard their cry because of their taskmasters (super technological development by technological men). I know their sufferings, I am affected by sufferings... Heschel... and I have come down to deliver them out of the hand of ... inhuman domination technology" (Exodus Exodus 3:7,8).

Will we offer all the fruits of technology within the context of the great ancient creed? "A wandering Aramean was my father... and (the Lord) gave us this land, a land flowing with milk and honey. And behold, now I bring the first of the fruit of the ground //together with technological fruits // which thou, O Lord, hast given us" (Deuteronomy 26:5-10). Is it a matter of extension ("taskmasters" can mean today's technological men) or addition (the fruits of the ground plus technological fruits)? It does not affect the character of the biblical God. Is it something more?

I see the theological place of technology (this location is personally important to me) in the context of extension and addition. Perhaps I can make my point through the complaint of Hosea who worked in the dangerous age of Canaanization of Israel: "And she did not know that it was I who gave her the grain, the wine, and the oil,. . . " (2:8). We who work in the far more dangerous time of the technologicalization of mankind may say, "And the world did not know that it was I who gave the world fast grain, the wine, and the oil. . . ". I must fight against the possibility of technology becoming a "taskmaster" afflicting mankind. I wish to see the technological mind placed in the context of extension and addition.

But I cannot stop here. I want to go to that mysterious point of suffering, the strange healing efficacy of suffering for others. The Lord's Supper (Eucharist) as the anamnesis of the death (suffering) of Christ has stood and is at the centre of the Christian liturgy. Liturgy (leitourgia), "action of the people", reaches the depth of divine worship when it directs its attention to the suffering of the Son of God, Jesus Christ. Liturgy ("whole public worship of the mystical body of Christ", *Mediator Dei* 1947) invites man to meditate upon Christ's suffering through which the new humanity and new human relationship are built. Now I am using the word liturgy strictly theologically. This is the moment when the two thrusts of the two minds – the curved, slow, dialogical, and straight, fast, self-assertive – must come together at the Table of the Lord. He invites them to come. The question posed to both at the Lord's Table is fundamentally theological, and in that sense a far-reaching one.

The One who invites two kinds of minds to come to His Table will ask them to meditate upon the theme of suffering for others. How will the curved, slow, dialogical mind express the message of the Eucharist? How does the straight, fast, self-assertive mind express the message of the Eucharist? How will they, in a concrete manner, contribute, internally and externally, in the divine project of building the new humanity and the new relationship in the world today?

TECHNOLOGY, HISTORY AND LIBERATION

by Prof. Langdon Gilkey

I.

This short paper seeks to set out some of the issues which are shared by technology and religion (or theology as reflection upon religion). I say 'set out' because no attempt is here made to propose resolutions, either theoretical or practical, for these issues; and I say 'some' because a whole range of important problems is here omitted.

I am concerned here primarily with the *problems* that technology presents to modern culture: problems vis à vis nature and (in this case) problems vis à vis man himself. Since it might seem, therefore, that this paper represents a negative, an 'anti-scientific' or an 'anti-technological' point of view, it is well to speak to that question at the start. The inquiries of science and the development of technology represent, to my mind, one of the clearest illustrations of the *creativity* of man, and consequently one of the most significant, and in actuality as in potentiality, one of the most positive aspects of human culture. It is *good* to know all that can be known; it is *good* to provide the technical means to make human life as secure, as comfortable, as bearable as possible. Without knowledge and without techne, man is not fully man, and cultural life at any level is impossible. No problems are then understood, and no creative solutions are at all possible. In this sense understanding and its application are of the essence of the creative powers of man, part of his 'glory'. In fact it has been the traditional Christian view that man's cognitive powers are the most crucial part of the *imago dei,* reflecting man's relations to the Divine Truth.[1] Thus science and technology, as the developed modern expressions of these two essential human capacities, are undeniably creative and good.

It is however also the case, I believe, that everything in man partakes of ambiguity; that such is the power of human freedom, and its waywardness, that even his 'best' characteristics not only can be misused, but may through that misuse create serious and possibly devastating problems for his life and for the history which he helps to create. Certainly we all agree that this has repeatedly happened with the fact that man is, apparently, incurably a 'religious' being: creative and good, yes; but also the source in history of much of the superstition, the fear, the intolerance, the fanaticism, and the cruelty of history – though this was and often still is hard for clerics and theologians to see! Certainly it is true for man's moral conscience and aspiration; creative and good (where would we be without them?) – but also the source of moral intolerance, spiritual pride, hypocrisy and personal and social repression. As with religion, much that is *immoral* has been done in the name of morality and for its sake.

To point out the problems that science, and in this case technology, present to a culture dominated by them, as ours surely is, is, therefore, not to be anti-scientific or anti-technological – any more than to point out the problems religion and the Church have posed to society is to be anti-religious. It is only to admit the *humanity* of science and technology; that despite their creativity and glory, they too are partial and relative, subject to misuse, and that their appearance as dominant on the stage of history may be both healthy and warped, in fact, as creative/destructive or as destructive/creative as has been the appearance of religion when it was dominant in society. Only those who see science and technology as 'saviours', as a pure, cumulative tradition breeding no evil but creating only good, as therefore in some measure trans-human while all other aspects of culture share our common ambiguity, will take offence at this. But that is what priests, clerics and theologians felt about their beliefs, their systems of thought and morals, and their institutions – until a scientifically oriented modernity taught them to see the humanity of even the religious existence in which they were involved! From a theological perspective, I believe, only God is absolute and utterly unambiguous; all that we do – whether it be our understanding, our morals, our art, our techne, or our religious existence and acts – are both creative and good and also relative and wayward. This is the deepest reason, I think, for a conference between science, the humanities and theology. Because no discipline is the whole and so infallible or perfectly 'pure', each needs the help of all the others – as well as the help of providence and grace – if any one of them is to realise its own fullest and most creative possibilities.

[1] An effort is made to give a positive theological interpretation of man's cognitive powers, especially in science, in the author's book *Religion and the Scientific Future,* Harper and Row and SCM, 1970, Chapter II. Some of the problems of technology in the future developed in this paper, and their relation to Biblical symbols, form the subject of Chapter III.

II.

Technology as a social and historical phenomenon presents the humanistic, the moral and the religious consciousness[2] with two interrelated but nevertheless distinguishable areas of problems:

(1) problems vis à vis man's relation to his natural environment; problems therefore centering around the general issues of 'ecology' and the preservation of the integrity of nature's system; and so problems calling for new attitudes towards nature, her inherent value, and so a reevaluation of the meaning of the human role in the entire creation and so of our classical (Western) conceptions of human dominance over and use of nature. These issues we shall not discuss in this paper since other contributions included here are rightly devoted to them.

(2) Technology also presents us with problems vis à vis *man;* problems concerning his values, his inwardness, his freedom and spontaneity, his identity and integrity as a person. It presents problems, therefore for the political, economic and social organization of any future society as conducive to the realization of this potential humanity; and it thus presents problems relevant to the meaning of the historical and social process itself. That is to say, technology relates itself to the Christian symbols, not only of creation and of nature, but also to those concerned with man, with community, with social ethics, with history and with eschatology: the imago dei, the fall, the new creation, the future, and God's promise of the Kingdom. Our purpose here, then, is merely to spell out under (2) some of those interrelations of technology and theology concerning man and his social life, and so to provide (a) possible bases for our further discussion, and (b) at least one picture of the scope of the issues with which we here might fruitfully be concerned.

A. As has been increasingly evident in the last decades, modern technology provides the means to control, to reorganize, to redirect and reshape, not only the nature around us, but also the forms, the character and the potentialities of the humanity which heretofore we have all been given, so to speak, 'by fate'. It proposes this new human control over humanity itself through developments in genetics, in medicine, and in new powers of psychological and possibly sociological conditioning – as well as in the less deliberate changes in life-styles, in values, in habits of daily life etc., which a technological, industrial society seems inevitably to bring with it (cf. Toffler's book *Future Shock).* Since such control through knowledge means in effect an increase in the control of *some* men over *other* men, even over the 'fates' that determine other men, one need not be an alarmist to see in this the possibility of the control over present and future generations by an élite of scientists and through them a vastly enlarged control over all by the political leadership of any given society. Through technological control over the shape of our humanity, science has thus potentially increased immeasurably the powers of manipulation which some men possess over other men. It has also increased immeasurably the scope of future political power, moving beyond the traditional forms of 'external' control over human behaviour and of 'internal' control through influence, threat and propaganda, (both *also* increased by technology) to the far more subtle, effective and *total* control over the character and potentialities, both outer and inner, of man himself. If history makes evident that manipulative and political powers are always corruptible, it also makes evident that such powers through *knowledge* are also corruptible (though this is less believable to the intelligentsia!); and there is no empirical, i.e., historical, warrant for doubting that this also holds true for knowledge gained through modern *scientific* inquiry.

A host of questions are raised by these new possibilities of man's vastly increased control through knowledge over other man: (1) what sorts of ethical goods are gained by these new possibilities of control; what sorts of ethical goods are threatened? (2) What kinds of legal, political or economic safeguards are called for to increase the first and to minimize the second? (3) What sorts of attitudes on the part of a technical culture towards man are implied in, and required by, creative answers to (1) and (2)? In response to (3), which is more the concern of the theologian *qua* theologian (1 and 2 are more peculiarly the concern of the humanistic or Christian ethicist), it seems to me that the Christian symbols of the imago dei, of the fall, and of the 'new being' are immensely relevant: the first in emphasizing the

[2] I say 'humanistic' as well as 'theological' because most of the problems herein mentioned are seen as problems by humanists and theologians alike. The ultimate horizons within which we discuss these issues may be different, and so our proposed resolutions (if they be forthcoming at all) may differ. Nevertheless, as a glance at the writings of Erich Fromm *(The Revolution of Hope: Towards a Humanized Technology),* Herbert Marcuse *(One-Dimensional Man),* Theodore Roszak *(The Making of the Counter-Culture)* or Reich *(The Greening of America)* on this topic show, there is a common concern among humanists and theologians to find ways of preserving both nature and the humanum in a technological world.

personness and so the value of every man, to protect man as the *object* (or victim) of manipulation so that his humanity is not lost in the process; the second to remind us of the fallibility, partiality and inevitable self-concern of even the most 'scientific' controllers of other men; and the third to help guide us *positively* in envisioning creative uses of this whole plethora of powers over itself suddently granted to our race. Many Christian ethicists (one thinks immediately of Profs. Shinn and Gustafson) have already done outstanding work in these areas. Here the most *immediate* ethical, legal and political problems of *public* control over technological controllers arise.

There are many ironies, as we shall see, inherent in the rise of technology; here appears the first. Technology represents man's control over the 'fates' that hitherto controlled and shaped his life quite beyond any pow of his own to determine them: the unavoidable and *intractable* necessities of the external environment: shortage of food supply, of water, problems of heat and cold, distances of space, etc.; and the inner fates of disease, of genetic inheritance and weakness, psychologically debilitating influences, harmful social conditionings, etc. Technology in the widest sense promises to minimize if not eradicate all of these determining forces over man; thus it seems that human purposes through knowledge and the intelligent use of knowledge can finally master and so in the end replace blind determination in man's life. From Francis Bacon through most of its modern supporters, the champions of technology have thus represented it as the symbol of the victory of human intelligence and freedom over blind determining necessity. Yet in our day this 'victory' of human freedom over fate has seemed to become strangely obscured. One of the reasons is precisely the appearance through technology of new possibilities for the manipulation of man and so of increased political control over man's freedom through control over man himself. Freedom and intelligence, in mastering nature and all *external* fates, seem only to have succeeded in breeding a new *historical* tyranny through scientific knowledge – and for benevolent purposes! – far worse than the ancient tyranny of necessity it deposed.

B. An even deeper problem is posed by technology as a social phenomenon. As a mode of encountering and resolving problems technology, as Jacques Ellul points out,[3] represents in essence a *rationalized, systematized* and so *organized* answer. Consequently, technology, as a dominant social phenomenon, tends to organize as much of life as is possible into an organized *system,* a system in which every participating part is subordinated to the purpose or goal of the system, namely, the resolution of the common problem. The threat here, as Toffler has rightly noted, is not so much an increase of *hierarchical* authority, as it is the submersion of each individual's intentionality or purpose, rational consciousness, and creative activity into the requirements of the system as a whole. Each part of a machine or each human in a human system may well be an equal part, as in any thoroughly rationalized team action (whether in American football, scientific research, or corporation and government life), but each part *is* and *functions* merely as a part. Technology does not so much make man a machine, as it makes each human a *part* of a machine. Consequently, like a part, the worth of his or her intelligence, of his or her imagination, of his or her perseverance and energy, and of his or her 'virtue', is determined solely by his or her participating role in the system within which he or she functions. Thus is one's own humanity and that of others estimated only according to the norms of efficiency, rationality and cooperation demanded by the common effort to reach the common goal. Intelligence in turn is estimated only in its production and furtherance of *means* instrumental to the ends given by the system; and character and activity are alike estimated only as each contributes to the smooth working of the system. A technologically organized society thus poses a threat to large and important aspects of man's humanity: his individuality and its inherent worth; his sense of the inherent worth of what he is doing; his own creative imagination and originality however unrelated to the goals and values of others; his personal touch through his own reason with ends in his life and work; and the uniqueness of his own conscience with regard to the methods and goals of his life and work and that of the cooperative system in which he participates. A modern Kierkegaardian might remark that technology represents the historical *actualization* of Hegel's 'concrete universal' in which all parts are *merely* particulars of the whole, that is real and of value *only* as cooperating members of the system. Clearly in such a society to challenge the system or its goals will more and more seem to be not only irrational but immoral and uncooperative; for reason, morals and goals have themselves been redefined in the terms of a technical age and its requirements.

This is, I take it, the main brunt of the critique of technology powerfully presented by Ellul, by Fromm and by Marcuse, among others. The latter two add the potent point that this loss of individual, inward, independent depth, spontaneity and self-direction in our humanity is compensated for in modern technological society by two 'sham' factors: (1) the increase in the *appearance* of choices, and so of individuality (of goods, of jobs, of roles in society, of political parties and ideologies, of religions etc.), none of which begin to counter the depth of conformity and inward emptiness required by participation in the system as a whole. (2) It is also compensated by the surfeit of material goods and

[3] Jacques Ellul, *The Technological Society,* Chapter 1.

external pleasures produced by the system, and paid for by participation in it, which again give the *appearance* of individual 'well-being'. Public life, the realm of 'intelligence' and 'action', thus becomes in fact, a realm of intense inward and behavioural conformity; private life, the realm of pleasure and of feeling, becomes a realm of shallow and passive individual consumption. In both of these realms man is constituted essentially by external relations; by passivity rather than activity, by emptiness not strength; in neither are creative intelligence and creative feeling involved; and so in neither is there any genuine inward spontaneity or creativity, rational or volitional.

This is a radical criticism of technology as a social phenomenon, as the determining factor in modern society and its impingement on the individual. Let us note that it is explicitly leveled at both forms of modern 'advanced' society; democratic/capitalist and marxist alike. Technology here seems, therefore, to pose a problem that transcends (as Roszak has rightly pointed out) the traditional debate between our political and economic alternatives. For this reason a vast number of commentators on the present scene, Ellul, Marcuse, Bloch, Fromm, Roszak, Reich, Ferkiss, Laing, the various theologies of liberation, not to mention assorted religious cults and hippy groups, call not only for political and economic reform of the objective structures of our common life, but even more for a 'new consciousness', a 'new inwardness', psychoanalytic, philosophical or religious in character, and thus a new understanding and evaluation of our humanity, its deepest character and so its requirements, if the problems of technology and the human future are to be resolved at all. Clearly again technology has raised issues which touch directly on humanistic, religious and theological concerns, and the ways our common technological culture can, now as a cultural system of human activity (as opposed to a new system of control over man) be understood and tempered so as not to threaten the humans who must participate within it.

One might add that this shaping of our public life into a total, all-encompassing system is an accelerating, and apparently irreversible process. Not only does technology tend, as a cultural 'mood' and ideal, to engulf every aspect of life, but the *results* of technological organization themselves call increasingly for a more and more centralized systematization. One of the most pressing problems of present technology, at least in a society like ours without centralized economic or political control, is that technological innovations (ironically the results themselves of intense rationalized, systematized and so unified endeavours) are begotten almost daily in an infinite variety of industrial and governmental centres; and they are produced in all these places for an almost infinite variety of purposes and goals. In fact, therefore, the whole operation is quite free of any overall or 'rational' unity or control. This irrational, because unplanned and uncontrolled, spawning of technological innovation is what has endangered the environment, polluted our atmosphere and waters, and blighted our public space; it can in the end, unless controlled, endanger our supply of food, energy and water and even our lives, if one takes into account the uncontrolled proliferation of atomic weapons in a plurality of centres. Centralized control, ultimately of a world-wide sort, of technological invention and production thus seems to be called for by precisely the 'progress' of technology itself. The very success of its efficiency and rationality in achieving that progress in turn requires, in order that the future movement of that progress be *responsible,* a *total* rationality and so unity lest the system as a whole increasingly manifest the height of irrationality and irresponsibility (what one engineer has called 'a vast, irresponsible, destructive *frolic* of technological inventions'). Technology as a *plurality* of uncoordinated systems is obviously unplanned and so irrational and irresponsible; it seems, therefore, to require that it become *itself* a centralized, total system in order to realize its own potential rationality and usefulness. Thus further rationalization and control are implicit in the 'rationality' of technology itself. What it in fact in the end requires is probably a unified, centralized control over inquiry, invention and production alike, spanning the academic, the industrial and the governmental worlds, and in principle – because this *is* a small world – omitting no section of the globe. A responsible and so rational technology seems to entail a total world system controlling all the intellectual vitalities of humanity, and so it seems to imply a radical denial of the value, let alone the future possibility, of a plurality of free communities and societies. Here again appear before us a nest of legal, economic, political and social problems of the greatest practical importance for the future if not for the immediate present. Such practical problems as these require the most delicate interrelating (in discussion and in the formulation of viewpoints and proposals) of the concerns of several diverse communities in our cultural life: the scientific and engineering communities, the community of lawyers, social scientists and political theorists, and finally the community of ethicists, philosophers and theologians – if a vision of a world technological *society* in which humanity is possible is to be achieved.

C. The final two problems in this general area are admittedly more theoretical or 'abstract' and less immediately practical in character than the above, though every important theoretical social problem probably carries with it in the end all sorts of practical implications vis à vis social and historical life. As we have illustrated, technology represents the (in part) actual victory of human rationality and purposes (human freedom) over the necessities of nature, and in potentiality and in principle the same victory of freedom over the inherited, the social, and the psychological 'fates'

that have determined our human life heretofore. And yet as we have argued, in part in actuality and more in prospect, technology also represents a new sort of historical 'fate' threatening the freedom of man to be man in history. This naming of technology as 'fate' sounds, to be sure, 'mythical' and thus unempirical, even dreamy, 'poetic' thinking about hard matters; but this characterization of our situation has, I believe, firm empirical grounds. For it is agreed (1) that technology is irreversible and unstoppable; no analyst of culture dreams of dismantling the technological machine. Whether we will or not – and most of us 'will' – we are fated and our future is fated to live with, to profit from, and probably to suffer from technology. As all agree, our only hope is to control it so as to make it responsive to the needs of our human freedom. But that requirement of control, as we just noted, in itself, seems to add to rather than to diminish technology's potential threat to the freedom of man in history. (2) Secondly, all the evidence points to the fact that the concrete growth of technology has been motivated and so guided not so much by our highest moral ideals and most rational judgements, but rather by our economic greed, our national anxieties and pride, and our human lust for security, power and personal well-being. 'Rationality' here seems (as so often in history) to be the instrument of our deeper *bondage* to self-concern, more than it does the benevolent tool of our intellectual and moral freedom. Strangely, as Augustine might have predicted, because we have little *self*-control, our technological control over our environment and over others threatens to become a 'fate' that controls and determines us.

Thus once again does technology impel us into the deepest issues of political theory, philosophy and theology. How are 'freedom' or 'liberation' obtained in historical life? Are they to be gained by the imposition of a communal rational order on the vitalities of life so that natural necessity and customary irrationality, as the main threats to our freedom, are banished by unified, systematic control? Is a rational plan, possibly political, possibly economic, possibly technological, but in any case total in scope, the secret of liberation and so of human realization? Are we more free when all together we intelligently control life and shape it where we will? In this context technology seems to represent at long last the possibility of the actualization of the ancient 'rationalist' dream to impose a rational order on all of life and thus make it 'good'. Or does the real threat to 'liberation' in history come not so much from natural necessity, inherited irrationality and blind custom, as precisely from such plans themselves, so that, as Burke argued against the French revolutionaries, it is better to leave to unplanned and organic historical developments, plus the vitalities of individual autonomy, the nurture and the guardianship of freedom? This classical debate in social theory and philosophy between the champions of planning and of order and those of an unstructured history and individual autonomy has suddenly reappeared in any serious discussion of technology and our social life. Clearly, as the American and European experiences have established, a technology that is the servant of a plurality of independent economic and political powers is in the end irresponsible and poses a threat to nature and to man's historical freedom alike – and a threat both for their own citizen's and for the citizens of the non-technical societies that they are free to ravage. On the other hand, it seems equally clear that a *total* rational order, combining in one system political, economic and above all technological order, poses a different but fully as virulent a threat to man's freedom in history. How *are* order, autonomy and freedom to be related in a social life dominated by technology? How do our various current social theories (democratic, capitalist, socialist and marxist) understand these interrelations of order, autonomy and freedom in the light of the new intensity (and threat) to each, (i.e., to order, autonomy and freedom) which technology brings with it? How are issues of *justice* (under the law, vis à vis political rights, vis à vis economic rewards and participation, vis à vis self-determination of classes, races and political groups) related to these problems of order, autonomy and freedom in a technological age? Does a more just society politically and economically resolve these problems of order and freedom raised by technology; does it leave them untouched; or how *are* they interrelated? As we have seen, technology raises in heightened form these perennial problems of social theory: order, autonomy, freedom and justice, and so implicitly it poses the deepest issues of social theory, and of a philosophical and theological understanding of man, of community and of history itself. Correspondingly no political viewpoint or party, and no theology of political liberation, can avoid these issues in their *technological* context if they are to be relevant for the human future.

D. Finally, as we have noted, technology represents to a goodly number of important minds in our cultural life the mastery of man over necessity and fate, the establishment of human rationality and purpose as the principle 'agent' of historical development, and even of evolution itself. Thus to many the appearance of technology in history represents a new eon in human history, qualitatively different from the old history: an eon in which man at last can, if he will, master his destiny and create a new world. This view seems, when thus baldly stated, to be 'mythic' in the extreme; but it is put forward seriously by such hard-headed observers as Kenneth Boulding, Julian Huxley, George Simpson, Victor Ferkiss, Theodosius Dobzhansky and a host of others; and it has been *believed* by countless members of the scientific and technological communities both democratic/capitalist and marxist. Thus technology joins classical liberalism, marxism and the current eschatological theologies as projecting a new and qualitatively different future for man and for history; like them it includes within its total rationale an implicit philosophy of history which is vividly

eschatological in form; and it enters as one of the discussants in perhaps the most lively contemporary debate in theology. What *are* the factors, natural, human or divine, which are bringing about the future, and which promise to shape a new future? Will that future in fact be 'new'. And if so, *how* new? What are the continuities that will remain (e.g., of sin and greed, anxiety and self-concern, as well as of intelligence, moral idealism, courage, and so on?) even in a new age; and how will those continuities, if they are there, affect the new economic, political and technological worlds? How are we to understand the relation of new possibilities in all these areas, the 'not-yet' that is possible for us, to the present actualities (economic, political and technological) of social and historical life? How do we get from here to there? How, if they are, are the divine judgement, grace, providence and the eschatological future of God related to that immediate social future developing out of the political, economic and technological structures of the present? How, therefore, is the Kingdom that is to come to be conceived, not only in relation to personal life, to politics and to economics – as has frequently been done – but also in relation to technological society in *its* promise and *its* threat? These are admittedly theoretical questions in political theory, philosophy of history and theology. But their contemporary form is inescapably shaped by technology as a dominating social reality in the present and in the future; and thus they too are an intrinsic part of the subject of our discussion.

III

In seeking to outline the issues that are involved in the interrelations of technology and theology, we have moved from fairly concrete practical and ethical issues, through political and social issues broader in scope, to problems of the philosophy and theology of history. At each stage, let us note, a large number of concerns and so of disciplines have been essentially and so inescapably involved: scientific, technological, legal, ethical, constitutional, political, economic, philosophical and theological. Perhaps, therefore, the most immediate conclusions that are evident are: (1) the tremendous multi-dimensional *scope* of these problems as well as their importance for our common life now and in the future. (2) Consequently, there is a great need for inter-disciplinary discussion between all these disciplines if there is to be any creative shaping of that future by human reason and good will. Technology is *not itself* merely a 'technological' or even a 'scientific' problem. As a new force in history requiring to be understood and creatively dealt with, it forces on us the mobilization and the combined efforts of *every* discipline, scientific and humanistic, in the academy and in our public life. Thus technical and even scientific 'reason' alone are not adequate to the achievement of *their own* potential 'rationality' in history. The appearance of techne as a dominant and increasingly dominating factor in our historical life, with all its promise for good but also with its many threats to our own future humanity, requires from us as well legal, moral, political, philosophical and theological reason – not to mention redemption from sin and from the anxiety of fate as well – if technology itself is to realize the rationality and so the promise which it embodies.

RIGHTS FOR BOTH, MAN AND NATURE?

(An Ecumenical Debate about Process Theology's Perspective on the Ecological Crisis)

'A proper theological understanding of the Churches' responsibility for man's future may most creatively emerge from the encounter of Christian faith and tradition with various ideologies and with the insights of the social and natural sciences.' This assertion outlines a theological approach envisaged in 1969 as the starting point of Church and Society's ecumenical inquiry on the "Future of Man and Society in a World of Science-Based Technology". What was stated as a possibility has become increasingly urgent and has proved to be a crucial component in the definition of Christian commitment to social responsibility today. The environmental crisis, resulting from man's vast exploitation of man and nature, sharpened the challenge and accelerated the search for ethical criteria for assessing a sufficient quality of life, not only for the present generation everywhere but for future generations as well. It was in the light of this concern that Church and Society asked Dr. Thomas S. Derr, Professor of Religion at Smith College in the USA, to prepare a short, but comprehensive study of the issues involved. His book "Ecology and Human Liberation: A Theological Critique of the Use and Abuse of Our Birthright" (Geneva 1973) surveys the several different attitudes and assumptions within the environmental debate and offers a theological perspective based on the biblical tradition. A short excerpt from his book (pp. 25-28, 37-39), focussing on his description and critique of process theology, opens up the following debate on man, society and nature. This portion of his book has stimulated a particularly intense discussion. Prof. John B. Cobb, Jr. and Prof. David R. Griffin, both from the School of Theology at Claremont (Calif.), USA and representatives of process theology, have taken up the gauntlet and expressed their fundamental objections to Derr's view. We are grateful for Prof. Cobb's comment which is excerpted from a personal letter and for Prof. Griffin's contribution which has been especially written for *'Anticipation'*. His essay, and Prof. Derr's two rejoinders, had to be shortened for publication here.

The paper by Prof. Charles Birch, Head of the School of Biological Sciences in the University of Sydney, Australia and by Prof. Cobb is one of the preparatory papers for the 1974 World Conference in Bucharest on "Science and Technology for Human Development: The Ambiguous Future and Christian Hope".

Finally we include a brief excerpt from the manuscript of a recently completed book by Father Paul Verghese, Principal of the Syrian Orthodox Theological Seminary Kottayam, Kerala, India. His perceptive study entitled *"The Human Presence: Reflections on the Role of Humanity in an Evolving Universe"* is a significant contribution from an Asian and Orthodox perspective.

HOW LOUDLY SHOULD A CHRISTIAN SAY: "MAN IS UNIQUE" – *by Thomas Sieger Derr*

Like most new movements in theology, this twentieth-century development has affinities with earlier religious thought, belonging methodologically to what is usually called "natural theology". In recent times its principal specific source has been the writings of Alfred North Whitehead. The list of those who have worked out his seminal ideas for religion is long, but among those writing in English I might mention Charles Hartshorne, John B. Cobb, Jr., and Daniel Day Williams, as well as a substantial group of scientists and philosophers of science such as Ian Barbour, Harold K. Schilling, and Charles Birch. I shall confine myself here to some of the implications of process theology which are put forward by contemporary advocates as being relevant to the environmental problem.

Among the basic ideas of Whitehead which have been offered in ecological service are pan-psychism and the limited God. Reality, he wrote, is a continuous flow of discrete events, each succeeding one influenced by those that have gone before, but adding its own unique contribution. In the ensemble these individual entities present a picture of a whole changing constantly, a process, something I imagine like the passing lights whose flickering on and off spells out news bulletins on billboards.[1] The whole is perfectly comprehensible, an intelligible process, though it is made up of single flashing lights. But the metaphor must not be followed further, for it is Whitehead's contention that each entity

[1] The metaphor comes to me from my colleague Sten H. Stenson.

is partly self-created, having the capability of reacting in its own particular way to the influences on it. This reaction is not wholly determined by external forces, nor is it wholly predictable, except statistically. "Natural laws" describe relatively stable, recurring patterns in the process, but do not establish infallibly the behavior of any particular entity. These all have spontaneity, what amounts to a kind of mental quality of their own. Of course we ask how this description of all reality as mentality in process, this pan-psychism, can possibly apply to inert objects, say stones. The frank answer is that the mental quality of a stone is so small as to be for all practical purposes negligible. But Whitehead treats all reality on the analogy of human experience, so that "lesser" forms of life are really just simpler forms of the complexity we find in higher forms. He infers the presence of feelings in all objects by analogy with man, on the theory that existence is a continuum of related forms of life. The mental aspect of all reality remains, however rudimentary it may be in most cases.

God influences this process we call reality, but He does not determine it. All His creatures, from man to stones, have their freedom of choice, and God does not even know in advance what they will do in a given instance. He has a vision of an ideal future, and acts to influence creatures in that direction, reacting to their deviations by presenting a new set of possibilities, leading them on. He shows His love for man and nature by *not* overruling their free choices even when these are bad. Better the dignity of a free creature sinning than the mindlessness of the automaton doing what God wills because he or it literally cannot do otherwise.

Here again process theology may seem reasonable enough applied to men but puzzling applied to non-human nature. How do our famous stones have a free choice against God? The answer is that even though low-level matter shows stability and regularity compared with man, it nevertheless has a history; and in its centuries-long evolving process it shows slow changes that represent its own reaction to God-given possibilities. God acts in these slow changes in His several ways, creating potentiality, offering possibilities, reacting when the choice is made, so that it can be said He works through cosmic processes. As nature is historicized, it is included when we say God acts in history. Natural processes are part of history, broadly conceived.

Obviously this God is neither omnipotent nor omniscient in the traditional sense. He is to a very large degree immanent in the world process, and does not transcend it sufficiently to overrule either human sins or nature's malfunctions. Several of the process theologians openly invoke the picture of a God who *experiments* continually with His creation as His experience with it changes. His basic aim does not change with the flux of events, but He must find ever-new ways to further that aim as a result of the surprising acts of all matter. God's being is affected by the world. He is not self-sufficient but actually needs the world for His own existence. God without the world would not, *could* not be God. Far from finding these limitations on God embarrassing theologically, most process theologians find them particularly appropriate to Christianity, the religion of the Incarnation, of the vicarious atonement, of the suffering God.

Process theology owes much of its appeal to its congruence with modern science, which, of course, helped to shape it in the first place. Rather than the mechanistic, essentially static Newtonian universe, appropriate to deism's once-for-all creation in perfection, we have here a continually evolving and changing universe where novelty, or new creation, is always occurring. Process thought is thus attuned both to the indeterminacy of modern physics' view of the behavior of matter, and to the evolutionary adaptability of modern biology's description of the development of organisms. Because the divine creativity is immanent in the process, the older scientific objection to "miracles" falls away. God's action does not contravene established natural laws, which was the unacceptable point for scientists, and perhaps for most contemporary Christians, too. Rather natural laws themselves are only statistical descriptions of spontaneous activity, activity in which God is a regular, constitutive participant.

There are also some theological bonuses to process thought, in the form of solutions, or at least new and fruitful approaches, to some old problems. Certainly there is a new way of looking at the relation between the transcendence and immanence of God. The Biblical idea of divine revelation through changing events looks newly plausible. The continuing divine influence over nature itself is restored, after the banishment imposed by scientific incredulity, and acquiesced in, first by deism, with its past perfect creation and static world, and more recently by existentialism, with its relegation of faith to human feelings *about* events. Perhaps most noticeable of all, the problem of evil, not just human evil but "natural evil", seems explained. The novelty and spontaneity of the process, the freedom of all entities to respond from their own inner being, means that evil, sin, tragedy are bound to occur with some frequency. God permits this as the inevitable outcome of freedom, which is a good. What seems to us the cruelties of nature – the savagery, the mindless destruction of storm and volcano, the diseases – are the accidents in a trial-and-error process, accidents which in the long course of time God moves to correct by exerting His less-than-compelling influence. The problem of evil is solved, then, but at the cost, of course, of God's capacity to overcome it – at the cost of the divine omnipotence.

Now, then, the ecological benefits of process theology fall quickly into place. Certainly the description of all reality, man included, as a continuum of analogous and interconnected events establishes an ecological viewpoint right at the start. An organic rather than a mechanical model of the world is presented. There can be no thought here of separating man from the rest of nature, nor is there likely to be any basis for heedless, arrogant exploitation of the natural world. It is not a thing apart, but a whole spectrum of existences whose being is analogous to man's. Of course, it is not to be worshipped: God is immanent in it, but also distinct from it. But His immanence, His organic relation to the world, tie it more closely to His being than other theologies do. One ought, therefore, to have gratitude, respect, even a bit of derivative reverence for nature. The God who Himself does not compel, who only "lures beings into the future"[2], presents a model of respect for the integrity of all life. If that integrity is so valuable in its own right that not even God overrules it, surely no man would presume to violate it in his fellow creatures, human *and* non-human. Here, in short, is the much-desired ecological conscience. It is scarcely a wonder that, in the current environmental crisis, process theologians have felt themselves vindicated, and sensed a new opportunity to urge their views.

Many of them are concerned to stay fairly close to the Biblical tradition, even though they cannot always maintain fidelity to it. If we take first the point about the psychic quality of the natural world, it seems obvious that the Biblical desacralization of nature is not especially congenial to process thought. We cannot find in the Bible much attribution of consciousness to nature. To make the activity of non-human matter mental or even volitional is to overdo the analogy between man and other creatures. The question of man's uniqueness tends to be swept aside in process theology, which of course is on a different quest. But man's uniqueness is at the heart of Biblical theology.

It is not that the Christians who are attracted by process thought really *want* to undervalue man. Charles Birch, for example, affirms that man is "unique in the animal kingdom" for developed culture, and says he certainly does not want to "underemphasize the spiritual uniqueness of man".[3] But the stress of his article is on man's continuity with the rest of nature, not only in biology, but in mind and culture; and he accordingly objects strenuously to neo-orthodoxy's concern to differentiate man from nature. I find here an unnecessary quarrel over emphasis, really over how loudly a Christian ought to say, "Man is unique".

The principal difference between process thought and Christianity is the former's concept of a limited God, one who is not omnipotent. He experiments with the world, but does not know from one moment to the next how His experiments will turn out. He cannot prevent evil, even though He wants to do so. He cannot get along without the world, as He is immanent in its processes; and so He "depends" on it. As it is incomplete, continually coming into being, so one may even say that God Himself is incomplete. The image of the maker or craftsman, the potter and the clay, typical of Biblical thought, is thus inappropriate for God's relation to the world, as it makes Him too transcendent and the world too inert.

The problem for Biblical theology is evident. God's transcendence is essential to this theology. The efforts of process theologians to narrow the gulf here are often impressive, but I think they are destined to fall short. For instance, if it is what the future will bring, then we say only that He has a higher batting average than we humans do in our attempts at prediction. If we try to save God's omnipotence by redefining it as present power or constancy of character, but limit Him in other ways, such as His ability to command nature, then we are plainly not talking about omnipotence. If we try to reconcile His sovereignty with His limitations by ascribing the latter to a divine voluntary renunciation of power, then we are not talking about real limits, but expressing our beliefs about God's nature as love. If we claim to have made the presence of natural evil compatible with a good and wise God by blaming it on nature's freedom of choice among possibilities and on man's reaction to natural events, we are still left wondering why God chose to present evil possibilities. We may try to restore the idea of divine transcendence by appeal to appropriate metaphors, suggesting that God transcends the world as a man does his body; but as long as the world truly limits God's possibilities, no metaphor can recover the kind of transcendence known to Biblical piety.

I do not claim that traditional theology has solved all the problems process thought addresses. But it does seem to me better to say that love, and suffering which accompanies it, flow from God's nature, and do not really limit Him. The world is better seen as His gift than His body, and transcendence as a more serviceable concept than the kind of immanence which restricts God against His will. And I am wary of solving easily the problem of evil by limiting God's capacity to act.

[2] Harold K. Schilling, "The Whole Earth is the Lord's: toward a holistic ethic", *Earth Might Be Fair*, ed. Ian G. Barbour, Englewood Cliffs, N.J.: Prentice-Hall, 1972, p. 121.

[3] "Creation and the Creator", in *Science and Religion*, pp. 208-210.

Maybe it is really better to see the world as different from God, to view nature as neutral and imperfect, reflecting the divine will, yes, but perhaps brokenly. Maybe the image of the potter and the clay *is* helpful. Maybe it is quite enough to say that the world *affects* God, but not that He truly depends on it for His own existence.

None of this is meant to imply that process thought is not a viable philosophy in its own right. I doubt only that it can be called Christian, though it may well contribute extremely useful insights to the growth of Christian theology. Perhaps those Christians who are drawn to process thought know there is a final gap that cannot be bridged, for many of them will not accept the full implications of the idea of divine limitation. For example Barbour, who tries with skill and ingenuity to close the distance between process philosophy and Christian theology, has the objectivity to see the limits of his project. He seems to me to touch the hard truth when he writes that the Whiteheadian limited God lacks the sovereignty of the Biblical God, lacks moral intensity, and may not be able to bring a worshipping community into being. This God probably

> *is too powerless to inspire worship. Perhaps in addition to the "persuasive" aspects of God there are more active and authoritative aspects, to which the sense of inescapable judgment and overwhelming awe in religious experience can testify.*[4]

Biblical theology will have God be God, to use an old phrase, and process philosophy has difficulty with this intent. But in the environmental crisis nothing vital is thereby lost to Christians, for the resources of their own tradition are fully as adequate as process thought is to this problem. They may accept the dynamic character of the world without admitting Whitehead's idea that God is limited by his own creative process. Respect for the goodness of the world, reluctance to harm it, humility before the complexity of creation, responsibility in one's handling of nature – these ecological results of the tradition of Whitehead are equally present in Christian thought.

THE CHRISTIAN CONCERN FOR THE NON-HUMAN WORLD – *A critique by John B. Cobb, Jr.*

... Derr tries to be fair to my own position – process theology – and although he does not quite succeed, the margin of error in its presentation is small and understandable. However, I suspect that the differences in our response to the environmentalists stem from theological differences, at least in part, and hence it may be desirable to say something about these too.

Derr identifies Christianity with Biblical theology. It has, therefore, a position that is in principle fixed, settled once for all, although obviously it is understood somewhat differently in successive generations. But he assumes that anything not taught in the Bible cannot seriously be regarded as Christian. The task is application of a fixed position to new problems, not the development of the position itself. This is the Reformation and neo-orthodox view and is certainly to be respected. I would hope however that it is not required that all participants in ecumenical discussion share it. Frankly, one reason I have not been greatly interested in ecumenical theology in the past is because of its conservative cast in this respect... We spent much too much of our energy trying to justify our claim to be Christians. Today it seems an outdated stance. In addition to Reformation and neo-orthodox Protestantism there is also liberalism and Catholic developmentalism. These allow that Christian doctrine is not something completed with the closing of the canon. A good deal of contemporary Christian theology is far more radical than process theology in its refusal of the kind of Biblical theology that Derr represents.

This formal difference between us shows up in our views of the environment as a substantive disagreement. Derr argues that the Christian cannot assign any rights to animals because the Bible does not do so. His argument more specifically seems to be that since the Bible desacralizes the world it cannot be interpreted as allowing a sort of soul force to the world. I find this argument weak, since I reject the equation of a soul force or a principle of life or subjectivity or mentality with the sacred. My own view is that desacralization is an important gain but that it is fully compatible with the view that things have some being and value in and of themselves. I don't want to get into the argument on Old Testament interpretation, especially since I don't believe that the metaphysical question as to whether in fact animals are of a certain sort can be settled by Old Testament exegesis...

[4] *Issues in Science and Religion*, Englewood Cliffs, N.J.: Prentice-Hall, 1966, p. 448. Cf. Ian Barbour, *Science and Secularity*, New York: Harper and Row, 1970, pp. 55-56.

Derr seems to think that if one accords rights to other creatures these rights would have to be equal or identical with those accorded man. If this were applied on an individual basis it would lead to utterly absurd consequences of course. If applied to species, its consequences would also be extremely questionable and our sense of individual human worth would be drastically violated. The question is not, however, no rights or equal rights. It is no rights or *some rights*. That is a large topic, and I won't write further on it here, but I do think that the denial of rights to man's fellow creatures, even when accompanied by the language of respect for the whole creation, sets the stage for insensitivity to what man is doing to his environment that not only in the past but also now in Derr's book is Christianity's most negative contribution to our present situation. That is why I call for a new Christianity that frankly recognizes the strong tendency in our past (there are notable exceptions) to give absolute rights to man and none at all to other creatures and acknowledges the inadequacy of that view despite the benefits that have followed from it, and then proceeds to develop Christianity in the direction of a wider concern. To me it is not un-Christian to extend Christian concern to the non-human world, although I am not trying to argue that the Bible did that along.

NATURE: VALUE OR RIGHTS? – *A rejoinder by Thomas S. Derr*

. . . I confine my comments only to two major differences from the general viewpoint of Biblical thought. . .

I wouldn't say that Biblical theology is a "fixed position" to apply to new problems, rather than a developing position. And I am obviously not saying that "Christian doctrine is something completed with the closing of the canon." You know that really isn't the neo-Reformation view, and I hope that sentence is just pardonable hyperbole. But I recognize the problem behind it. Our deepest difference is here, and I guess we respect each other for it. Our theological perspectives *are* different, and we grant each other the right to think ecologically out of our respective stances. No, it is not required that all participants in the Ecumenical Movement share my stance. . . I did begin my book by saying explicitly that it was a personal statement, and not meant to be official in any way, even though my private guess is that its stance and its conclusions are very widely shared in the ecumenical community. I do think there is a serious problem for this community, which is nourished on its common historic faith, if key points in that faith are contravened – and that is where I think the process thinkers might expect some difficulty. But it is an honest disagreement, and need involve no disrespect in either direction.

You say that I claim animals have no rights *because* the Bible doesn't give them any. This drives me into a fundamentalist position which is about as foreign and abhorrent to my nature as it is to yours. This issue is rather subtle between us, the issue about the rights of non-human nature. . . For myself, I really do say that things have value apart from man, thanks to the doctrine of creation. (Again let me say parenthetically that I am not trying to settle a "metaphysical question. . . by Old Testament exegesis," just trying to show what insights are or are not congenial to a Biblical view. The consequences of that analysis are for others to worry about. See my remarks above about the status of process theology in its own right.)

To return to the question of "rights", you will see that I hesitate to accept your characterization of my position vis-à-vis process theology, that I say other creatures have no rights and you say they have some rights. That makes it *sound* as if I meant they had no *value* apart from man, which I carefully denied. My problem is with the word "rights", whose societal and metaphysical overtones I find inappropriate applied to animals. I'd want some care at this point in our discussion. The difference between us is not that simply put. I think your next-to-last paragraph introduces the subject in a way which is not different from my conclusions, and we'd have to poke at it a little more to see what the problem is. . .

. . . Derr seeks to promote those elements in man's attitude toward his natural environment "which will be most useful in the present crisis." (8)[5] I too wish to do this. But we differ on one important issue – whether the Christian should think of subhuman beings as having intrinsic value, and hence as being deserving of our reverence and ethical consideration. There are two dimensions of this disagreement. (I) The question of truth: Do subhuman beings have value in their own right, and in God's eyes? (II) The question of utility: Is it ecologically useful to think of them this way?

Derr's answer is negative on both counts, while mine is affirmative. . .

Derr provides the following reasons for rejecting the idea that we should have reverence for nature in itself and should think in terms of ethical responsibilities toward nature in itself: (1) There is no good reason to attribute intrinsic value to subhuman beings. (2) In God's purposes nature is regarded simply as a background for the divine-human drama, and as a source for man's needs and enjoyment, not as an end in itself. (3) This traditional theistic-anthropocentric view has not been responsible for the excessive exploitation of nature in the West. (4) Reverence for nature and concern for its "rights" would undermine humanistic activism. The remainder of this paper will be a critical examination of these four theses. . .

I. Man, nature, and intrinsic value

Derr reaffirms the traditional position of Christianity and Western thought in general that human beings should have reverence for other human beings as ends in themselves, as centers of intrinsic value, but that nature should be regarded as devoid of intrinsic value, and hence all intrinsic rights, and hence regarded as merely a means to divine and human ends. Nature has no value independent of man. (35) One basis for this is the idea that biblical tradition with its doctrine of creation, *desacralizes* nature. No longer being regarded as divine, the value of nature is derivative. It is derived from the fact that it is created by a good God. (11, 12, 35) "Nature is the creation of God, and like all God's creatures, is to be loved for the sake of its Maker." (43) Its worth is due to its origin in divine creation, "from which all the world derives its value." (44)

However, there are two problems with Derr's argument here. First, the two alternatives he suggests (nature is either sacred or else its worth is wholly derivative) are not exhaustive. There is a third possibility – that nature, like humanity, is not divine, but that it has some intrinsic value as well as derivative value. Second, although he says that "all God's creatures" derive their value (solely) from the fact that they are created by God, he in fact assumes that one of God's creatures, man, has some intrinsic value.

Hence, the argument from desacralization is inconclusive. The biblical tradition in fact involves the desacralization of the *world* not simply of subhuman nature. What Derr needs is some justification for making a radical value-dualism between man and the rest of God's creatures.

One argument he suggests is that the attribution of intrinsic value and rights to nature would require assuming that subhuman beings were endowed with personality like men. This is rejected as both unbiblical and unreasonable. (43, cf. 14, 35) It certainly would be both unbiblical and unreasonable to suppose that dogs, let alone cells, are "endowed with personality like men." And they would certainly have to have this if we were justifiably to attribute to such beings value and rights *equal* to that of human beings. But it is not necessary that they have *equal* value and rights in order to have *some* value and rights. Process philosophers and theologians speak in terms of *degrees* of intrinsic value. Members of other species do not enjoy the same degree of value as human beings. But every individual is analogous to human experience in this regard, that every individual has at least some iota of value in and for itself. And certainly there is nothing in the "biblical perspective" that automatically rules this out as a viable position for a Christian to hold. The biblical authors surely were not "Cartesians before Descartes" – they surely assumed that animals had feelings. In any case the Bible should not be regarded as an authority on philosophical issues of this kind.

Hence we can move on to a statement that is directly relevant to the position of process thinkers. This statement is the following: "I do not think our human consciousness is sufficiently analogous to the life of nature to justify apply-

[5] All references in the text are to the pages of Derr's book *Ecology and Human Liberation: A Theological Critique of the Use and Abuse of our Birthright".*

ing our term 'rights', with its societal and metaphysical overtones, to the natural world." (43) With this statement Derr moves the issue out of the realm of "what the Bible says" into the philosophical realm, where it belongs. And yet he gives absolutely no basis for his statement. And many other people do think there is sufficient analogy between human beings and other species to justify holding that, if humans have some inherent rights, then individuals of other species should be recognized as also having some inherent rights (although not necessarily as many).

What bases are there for holding this contrary view? This issue is much too complex to discuss in any detail here. But briefly, the grounds are these: First, there is the notorious mind-body problem. If "nature" (which includes the human body) is thought of as composed of entities that differ absolutely, i.e., in kind, from what we call the human mind, then it is impossible to account for the interaction that we directly experience to take place between them. Only if the bodily cells are in some remote sense analogous to the mind, and hence interact in terms of the same causal principles, can the interaction be accounted for.[6]

Second, there is the fact that more complex individuals have evolved out of less complex ones. How is it conceivable that something absolutely different in kind (as contrasted with only radically different in degree) could emerge? How could something with experience emerge out of entities absolutely devoid of experience? How could some reality with value for itself emerge out of realities with no value for themselves? This problem can be regarded simply as a generalization of the traditional mind-body problem: For to "emerge from" is a relation, so the problem of evolution is simply an extension of the problem of how two totally unlike realities can be related. And it is really irrelevant where one chooses to draw the line. If one posits an absolute dualism between molecules and cells instead of between cells and minds, the problem of understanding their relations is just as intractable.

A third reason for assuming analogy rather than radical discontinuity is the obvious similarity between human beings and other animals, such as chimpanzees. The studies done with chimpanzees and dolphins provide no basis for an absolute dualism. A distinction, yes, but not a dualism. The presumption of continuity based upon present observation is further strengthened by reflection upon the evolutionary history of the species. Chimpanzees and humans undoubtedly had a common ancestor at some time in the past. Unless one wishes to posit some absolutely unique, *sui generis* act of God, creating human consciousness (which Derr surely does not wish to posit), then there is no basis for rejecting an analogy between human experience and the experience of other primates. Then, generalizing the principles involved further, there is no basis for rejecting some analogy with all animals. Carrying the reflection even further, on the basis of the ideas mentioned in the previous paragraph, there is reason to extend the analogy of being all the way down, to the most primitive individuals.

Derr avoids this kind of reflection altogether. And some of his statement are couched in terms that tend to keep attention away from the most relevant questions. When discussing whether any beings besides human ones should be assigned mentality, consciousness, volition, and rights, he speaks of "the earth," "nature," and "non-human matter," rather than of chimpanzees and dolphins. Furthermore, he misrepresents the position of process philosophers and theologians. They make a clear distinction between *genuine individuals,* such as minds, cells, and molecules, on the one hand, and mere *aggregates* of individuals, such as sticks and stones, on the other. It is only the genuine individuals which have feelings, experience, and some degree of self-determination. Hence, Derr is in error when he says that "Whitehead treats all reality on the analogy of human experience... He infers the presence of feelings in all objects by analogy with man." (26) But Whitehead only treats all other genuine individuals as analogous to human experience; objects which are mere aggregates are not thought of as analogous to human subjects. And Derr's question is misplaced when he asks, "How do our famous stones have a free choice against God?" Whitehead never affirmed that stones have freedom; Charles Hartshorne has explicitly denied it in numerous books and articles.[7]...

Derr's chief reason for opposing the idea of a natural continuum which includes man is the fear that this would undermine the uniqueness of man, uniqueness both in capacities and value. For example, he writes as if the attribution of *any* experience and intrinsic value to subhuman beings would imply that they are being treated "on a par with man," and that "nature is as valuable without man as with him" or that the value of nature is "equivalent to the value placed on man." (35, 36)... here applies to his own argument. It is true that a few people have advocated a "democracy" of all the creatures in terms of intrinsic value; but most pan-psychists, including process thinkers, speak in terms of a hierarchy of creatures, with man at the top in terms of complexity, consciousness, and self-value.

[6] Cf. Charles Hartshorne, *The Logic of Perfection and Other Essays in Neoclassical Metaphysics* (Open Court Publishing Co., 1962), pp. 224-230.

[7] E.g., *ibid.*, pp. 191-194; *Beyond Humanism* (Willett, Clark & Co., 1937), pp. 111f., 146-48, 165f., 190.

Furthermore, Derr claims that "the question of man's uniqueness tends to be swept aside in process theology, which of course is on a different quest." (37) The only quotation he offers in relation to this claim is one from Charles Birch in which the spiritual uniqueness of man is *affirmed.* But Derr assumes this is undercut by the fact that the stress of Birch's article "is on man's continuity with the rest of nature." (37) Derr does not cite evidence from any of the other process thinkers he had mentioned, such as John B. Cobb, Jr., Charles Hartshorne, and Daniel Day Williams. None of these men has "swept aside" the question of man's uniqueness. In fact, in his book, *A Christian Natural Theology Based on the Thought of Alfred North Whitehead,* (Westminster, 1965), Cobb stressed the distinctiveness of human history and said "next to nothing about nature," as he later states repentantly.[8] Hence, the only basis for Derr's claim is his own unargued premise that a position that rejects a dualism between man and (the rest of) nature cannot do justice to the actual uniqueness of man.

Derr believes that both the biblical perspective and the experienced facts make it necessary to think of man's "spirit" as "non-natural." (9, 40, 53). However, he does not explain what he means by "non-natural." He surely would not want to say that it is "non-creaturely," since this would make it divine. And I doubt that he would want to deny that it is interrelated with (the rest of) nature, through the human body. And I doubt if he would really want to follow Descartes in denying that other animals have awareness, feeling, and volition altogether. And he gives no argument for the impossibility of conceiving of the unique human capacities for self-consciousness, symbolism, reason, morality, and religious experience as higher developments of dimensions of experience present in lower creatures (such as the ancestors of the first human beings)...

II. Man, nature and the divine purpose

We have examined one of the possible bases for extending reverence and recognition of inherent rights to subhuman beings, i.e., the conception of them as having intrinsic value. Another approach that could be taken by a theist would be that of conceiving the divine will in such a way that reverence and ethical action toward subhuman beings for their own sakes would be included in obedience to God. Derr also rejects this idea.

Whereas Derr's term "desacralization" represents his rejection of nature's intrinsic value, the "historicization" of nature sums up his idea of the place of nature in God's purpose. Nature is to be thought of as made by God to serve his historical purposes, which means his purposes for man. Nature is to be transformed to meet human needs. (44) Of course, this transformation is to be carried out responsibly, in line with God's purposes. (53) Since God loves all his children, this means that our use of nature must take into account the needs of all human beings, past and future. (65, 66) Our right to use nature is limited by the similar right of other people, by the common good. But nature in itself is not included in the common good, since God created it solely for man's use and enjoyment, not for God's own enjoyment. (36) And, since Derr rejects the notion that there is any intrinsic value in nature, he cannot allow that it could be created partially for its own enjoyment. Hence, it must exist solely for man's use.

Derr is on fairly strong ground insofar as he argues that this is the biblical perspective. Of course, there are passages and themes that stand in some tension with this anthropocentrism. And not too much weight can be given to the idea that "man is the dominant and dominating actor and chief interest in the drama, because revelation is addressed to him"; for this might be only because man is the only part of the creation that has sufficient freedom to go violently astray from the divine purpose and hence seriously to upset the harmony of the whole order. Nevertheless, it can be agreed that the biblical perspective is predominantly anthropocentric.

But Derr is on much shakier ground when he concludes that Christian theology today should remain anthropocentric...

He surely approves of many of the alterations six thousand year-old creation to a four-to-five billion year-old creation significant enough to suggest some rethinking? As long as one assumed that man and the rest of creation were brought into existence at about the same time, it was quite reasonable to suppose that the rest of the world existed for the sake of man, and for the sake of the divine-human drama. But now that we know the subhuman world existed billions of years prior to the advent of man, the idea that it has no value in itself and for God seems incredible. Can the value of the earth (and the rest of the universe, for that matter) reside solely in its value for a creature who has been around less than one forty-thousandths of its existence? If one combines this new time-perspective with the arguments given in the previous section for the idea that all individuals must have intrinsic value, there seems to be sufficient cause for questioning the anthropocentric version of Christianity, according to which man is the only creature about whom God cares...

[8] Cobb, John B., Jr., "The Population Explosion and the Rights of the Subhuman World," *IDOC-North America,* No. 9 (September, 1970), pp. 40-62.

III. Traditional Christian ethics and the exploitation of nature

Denying that nature has any value for itself or directly for God means asserting that subhuman beings have no inherent rights and therefore make no ethical claims upon us. Hence Derr supports the humanistic or anthropocentric ethic that has been supported by traditional Christianity and has therefore dominated the West. Two closely related questions to ask are: (1) Has this anthropocentric ethic in fact been significantly responsible for Western man's excessively destructive behavior toward nature? (2) Can an anthropocentric ethic provide an adequate basis for a non-destructive treatment of nature? I will deal with Derr's responses to these two questions in reverse order.

Derr believes that his theistic-anthropocentric ethic can provide the basis for an ecological conscience as well as or better than views which would attribute intrinsic value to the world. He says his view also engenders love and respect for the goodness of the natural world. But this is entirely a *derivative* love and respect, based on the perception of nature as God's creation. (39, 43)

Unlike men, all of whom have the right to the means of subsistence (71), subhuman beings let alone fulfillment. (25, 43) In themselves they have no deferential treatment coming. While human suffering is unacceptable ethically, (54) ecological destruction is immoral only because it ruins the capacity of other men to use nature. (35, 60)...

What basis do we have for not behaving in destructive ways toward other human beings? First, sometimes there is the element of self-interest – we fear the retribution that may be evoked from other members of the group to which the injured persons belonged, or from the legal authorities. Second, there is the theistic consideration – we believe that the life of human beings is valued by God. Third, there is the element of altruism – we believe that other human beings have intrinsic value and therefore should not be harmed unnecessarily without some over-riding justification. This can be based primarily on a sense of justice; or there can also be an element of love involved. Hence, we combine more or less long-run prudential considerations with deference to both God and the sanctity of other human life, and thereby often overcome the short-run good (e.g., riches, prestige, position, power) we might attain by destroying some human life.

But what motivation does the theistic-anthropocentric view provide for mitigating our tendency to destroy subhuman life? First there is the element of self-interest – if we destroy nature we destroy the possibility of human life. (And yet this motivation is not as strong as it appears at first glance, since the consequences of our actions will primarily be felt by future generations of humans, not greatly by us. Also, there is the consideration pointed to by Garret Hardin in "The Tragedy of the Commons," that the material benefits gained by each individual through his exploitative-and-polluting activities generally far outweigh the natural penalties he individually will suffer.) Second, there is the fact that God wills that we preserve the natural world for the use of other human beings, present and future. But the third possible motivation, the love for subhuman beings, or at least the belief that they have inherent rights which justice dictates should be respected, is missing altogether. Hence only two of the three kinds of motivation present in regard to other human beings are available to mitigate our destructive inclinations in relation to nature. Is it not likely that this anthropocentric position, with its motivational shortage, will in fact result in more destruction than a belief-system which provided all three kinds of motivation?...

The second question of this section is whether this traditional form of Christianity has been an important cause of Western man's excessive destruction of the natural environment. Since Derr believes that a rejection of anthropocentric Christianity is not necessary even now he of course does not think one can draw "a direct line from biblical thought to ecological disaster via disrespect for nature." (20) Like other debunkers, he points out that similar behavior has appeared in China, Greece, and Islam. (18) But Islamic thought is practically identical with traditional Western Christian thought in regard to the God-man-nature relationship. Chinese thought, insofar as it was dominated by the Confucianist school, is anthropocentric, and more similar to the Judeo-Christian thought patterns than any other Far Eastern tradition. And there was a strong anthropocentric strain in Greek thought. Furthermore, to claim that Christianity in its traditional form has been a significant factor in the ecological destruction of the West does not require making the absurd claim that it is the sole factor. Hence, pointing out the destructiveness of non-Christian cultures does not absolve traditional Christianity from all responsibility...

I do not believe Christians should follow Derr in his defensive attempt to exonerate traditional Christianity of the charge of playing a significant role in the ecological crisis. Since this charge has been made by Christians themselves, and since it is not the essence of Christian faith itself that is criticized but only a particular form it has taken in the past,

other Christians can recognize the truth of the charge without feeling that they must now choose between Christianity and an ecological outlook – the alternative is a non-anthropocentric form of Christian faith, such as that offered by process theology.[9]

IV. Reverence for nature and humanitarian activism

Derr's arguments against the reasonableness and usefulness of extending intrinsic value and rights to subhuman beings have been examined. But the motive behind these arguments has not yet been discussed. This motive clearly seems to be the assumption that reverence for subhuman beings in themselves will undercut activism directed toward solving human problems. For example, he says that an activist program to improve the quality of human life by mastering nature cannot easily be carried out if romantic... language is allowed to dominate our thoughts," and he uses talk of "reverence for nature" to illustrate what he means by "romantic language." (55) And he even begins the book with a "parable" in which those who reverence nonhuman nature are symbolized by tourists who cheer when volcanic lava destroys the crops upon which the local farmers depend for their living. (5) He connects the "remystification of nature" with the "renunciation of the world of men and all their problems." (41) And he speaks of "the indifference to social justice displayed by most segments of the current environmental movement." (50)

Now it is true that some people who express a love for nature lose interest in solving the problems of modern society; but they are relatively few. And some rather brutal statements by well-known environmentalists can be cited; but this citation is highly selective, and most of those quoted are *not* persons who have expressed any reverence for the value and rights of subhuman beings in themselves.

The real basis for Derr's position seems to be his assumption (mentioned in section I) that the attribution of intrinsic value and rights to subhuman beings entails that the value and rights would be *equal* to that of human beings. (35f.) In other words, since Derr follows most humanists (Christian or otherwise) in holding (at least implicitly) that ethical obligations are rooted in the *sacredness* of human life, he assumes that the "belief in moral obligations to [nonhuman] creatures as spiritual entities" implies the sacredness of these creatures. (Cf. 41f.) But there is no reason to make this equation. And process thought explicitly denies it, thinking instead in terms of a hierarchy of intrinsic value, and a correlative hierarchy of rights. Reverence need not be uncritical; it is not necessarily evoked in equal degrees when it is evoked; and it certainly need not imply that the object of reverence is regarded as *sacred,* and therefore as possessing absolute rights, even the right to exist.

Accordingly, there need be no antithesis between reverence for human life and a deep commitment to human justice, on the one hand, and reverence for the rest of nature and resulting concern for its welfare, on the other. And there is no reason that the person with concern for nonhuman beings should not feel that "his bond to his fellow humans is stronger than his bond to the rest of nature," (10) and that achieving human justice is "rather more important than defending the intrinsic rights of nature." (35) He can agree with Derr that "the primary concern is for persons." (59) Justice requires treating equals equally; it does not require, and generally even forbids, treating unequals equally.

[9] This, of course, presupposes that process theology is a form of Christian theology. But Derr even seems to deny this. (37-38) He says that "God's transcendence is essential to this [Biblical] theology," (37) and he believes the God of process theology is not sufficiently transcendent, due to two features of this theology: (a) Derr claims that process theology says that God depends upon the world for His very existence. (26,37) This is simply an error on Derr's part – in dipolar theism God's *existence* and abstract *essence* are independent of this or any particular world; it is only God's concrete *experience* that is affected by the world.
(b) Derr says that process theology's denial of the traditional doctrine of omnipotence, according to which God can prevent all evil in man and nature, constitutes "the principal difference between process thought and Christianity." (37) Derr also misunderstands process thought's redefinition of omnipotence – it is not constancy of character, and certainly not voluntary renunciation of power (38), but is simply a statement of what perfection would mean in regard to power, i.e., the greatest power it is conceivable for a being to have. What process theologians disagree with in traditional theology is the assumption that the world could be real (i.e., not simply an idea in the divine mind), and yet that God could have *all* the power. It is because God does not have a monopoly on power, since all creatures have at least some iota of power, that God cannot prevent all evil, either in man or the rest of nature. Derr admits that this position solves the problem of evil that afflicted traditional theology. (27) And he seems to grant that traditional theology has not solved the problem. (38) In fact, the problem is especially acute in his own presentation. For he says, on the one hand, that nature is not autonomous, but that it is subject to God's direct rule, and is not at variance with the divine intention. (14) And yet, on the other hand, he stresses that nature is brutal, and he rejects the view that the laws of nature reflect the eternal law of God. (49) One wonders why this is so, if nature is completely controlled by God. Also, Derr believes that God could prevent all human sin; but he never suggests how this is compatible with his assertion that man does sin. (47) Nor does he explain how his acceptance of the traditional doctrine of omniscience, according to which God knows the "future", is compatible with his statement that the future is open, (44) and that the world affects God. (38) Nor does he explain how the traditional doctrine of omnipotence should not lead to the attitudes he wants to avoid, i.e., the simple fatalism of "what is, must be," (50) and the "acceptance of disease and passive acquiescence in the face of other natural disaster." (39).

Hence, if we think in terms of a hierarchy of creatures, with man at the top in terms of intrinsic rights and values, "the priority of human welfare over nonhuman nature" will be justified.

But this hierarchical rather than dualistic image will prevent our shifting with Derr from the *priority* to the *absoluteness* of human welfare, so that every slight benefit to the human species is justifiable, no matter how much suffering, depletion, and even extinction it requires among other species. We will be humanists, but not exclusivistic humanists.

Furthermore, this non-dualistic view is actually more supportive of human liberation itself, for it supports what can be called the "logic of liberation." This phrase refers to the principle that *no* being should be treated as a means to our ends without due consideration of its own rights as an end in itself. This "due consideration" may lead to the conclusion that our objective (but not absolute) rights are such as to justify over-riding the objective (but not absolute) rights of the being(s) in question, as when we commit "justifiable homicide," or send young men to probable death in a "just war." But the beings used as means are not "exploited" in the strict sense if their own value and rights are given due consideration. As long as the logic of liberation is not carried through consistently and applied to *all* beings, its defense remains arbitrary and its application capricious, and no group of beings is safe, even in theory, from exploitation. Only when we carry through the logic of liberation consistently will we have a rationally defensible principle upon which we can criticize the actual exploitation of any individual or group.

Hence, far from endangering the movement for liberation of peoples from various forms of exploitation, the recognition of the rights of subhuman beings based upon a hierarchy of intrinsic value will actually provide this movement with the theoretical justification it needs, especially in those areas where the emotional power of humanism derivative from theism is weak or non-existent. It it time to recognize that the liberation movement is finally one movement, and to stop speaking in terms which assume that "our" rights can only be furthered by denying that "they" have *any* rights. . .

Derr begins his book with the statement that "within the ecumenical community there is a conviction that moral priority goes to the weak." (4) Derr means the Third World, and I strongly endorse this application. But should the concept of "the weak" not also be extended to those of our fellow creatures who cannot even speak (at least to us) for themselves? I believe this extension to be required both by present needs and by the inner dynamic of Christian faith itself in conjunction with present knowledge. And this expansion will finally make Christianity truly ecumenical, incorporating the entire household of God into the realm of concern.

THE HUMAN DRAMA AND GOD'S GIFT OF THE EARTH – *A reply by Thomas S. Derr*

I

. . . David Griffin's first point is a discussion of the meaning of the "value" attributed to man and to the rest of nature. He accuses me of robbing sub-human nature of its value because I will not give it "intrinsic" value, nor "rights" of its own. He grants, with me, that nature is not divine, that it has value derived from its creation by God; but he wants also to say it has, in addition, "some intrinsic value." He says I award this second type of value to man, and unfairly and inconsistently withhold it from nature. His own position is that because there is continuity between man and other forms of nature, all categories that apply to man must apply to nature also, though perhaps in diminished form.

Nowhere do I say that nature is valueless. I argue simply that, from the perspective of a Biblical monotheist, one ought to say that all creation, man and the rest of nature alike, owe their value to God. The worth of all is derivative. I do not claim that man has intrinsic value and nature does not. Mr. Griffin to the contrary notwithstanding. In fact I see little warrant for his concept of "intrinsic" value, by which he seems to mean a kind of value independent of that given all things by their Creator. If one could imagine such a thing, I would not attribute it to man, lest it be an occasion for creaturely pride.

Yes, I do insist that man be more highly valued than the rest of nature. But then, so does Mr. Griffin, as he makes clear in a number of places. The argument seems to be about the intensity or degree of difference, which he calls a "distinction" and which he says I make into a "radical dualism," though I would not so label my view myself. Arguments of this sort are often not terribly important; and it matters little to me what the difference is called, as long as we are both clearly agreed that the value distinction is there.

Mr. Griffin faults me for finding the word "rights" inappropriately applied to nature, coming as it does from the language of social philosophy. Yet as long as he accepts the value "distinction," he must be willing to grant that *some* things appropriate to man are not appropriate to sub-human nature. Why may not one of these things be the term "rights"? His argument from the general continuity between man and the rest of nature surely cannot establish the uniform appearance of all such abstractions on every level of nature.

Mr. Griffin does not like the way I express man's uniqueness, and prefers his own vocabulary. I made what in his eyes is the mistake of speaking of the human "spirit" as a "non-natural dimension," by which, of course, I meant "distinguishing man from the rest of nature." I was not wholly content with "spirit," which is why I said, "call it 'spirit' or what you will," and why I used the word inside quotation marks. But I felt it justified as the traditional word, and safe enough as long as I limited its use to pointing to man's partial transcendence of nature. Mr. Griffin seems to agree with the intent, but would prefer to define the man-nature distinction in other terms, such as man's fully-developed self-consciousness. He taxes me mightily for my passages on the "spirit" and the human "non-natural dimension"; but if one is not wedded to a certain stylized vocabulary, there is little of real consequence in our differences here. As I said in a similar context in the book, such an argument is in many ways unnecessary, a quarrel over how loudly one ought to say, "Man is unique."

II

While the first point of Mr. Griffin's critique has to do with nature's *value,* his second concerns its *purpose.* I am accused of saying in effect that "God created [nature] solely for man's use and enjoyment," that "it has no value in itself and for God." Actually Mr. Griffin suspects this view may be well-supported in Biblical thought; but as such anthropocentrism is intolerable today, he says, I ought not to resist recasting Biblical theology to fit the new situation. After all, there have been theological changes in the past which I obviously accept. Why not another one now?

I am afraid the paraphrases of my position just quoted are not very accurate... As I do not claim to understand God's purposes in creation, I can hardly have said that he created nature *solely* for man's use and enjoyment. Mr. Griffin rails against "the anthropocentric version of Christianity, according to which man is the only creature about whom God cares." But this is simply not an acceptable definition of Biblical anthropocentrism, and I do not say it or imply it. My theme, put shortly, is that the Biblical focus on the human drama, on man's uniqueness, must be combined with a doctrine of stewardship of the earth, God's gift, valued because he made it. May I quote the book?

> Our natural environment is... to be respected without being feared, to be served on its own terms without contempt, to be studied and managed by men without doing violence to its essential structure. (p. 44). ...

III

Mr. Griffin's third criticism is that, despite my denial, the practical effect of Biblical anthropocentrism, past, present, and future, has been and will continue to be ecologically harmful. If nature is not awarded "intrinsic value and rights," it is left insufficiently protected from human rapaciousness. Against my skepticism, he insists that anthropocentric Christianity *has* contributed importantly to our destructive attitude toward nature, though he trims sail somewhat to take account of my misgivings about the historical evidence...

Mr. Griffin builds a kind of scoreboard model on which he adds up three different motives for respecting nature. He finds that my view permits only two of these to operate, self-interest, and respect for God's will to preserve nature for other humans. But, he says, I am lacking the third, belief that sub-human beings have "inherent rights"; and so, on the arithmetical principle, the motivation power in my ethic must be deficient. Actually, my discussion of motive has many more facets to it; and my conclusion gives priority to love of God as the ultimate motive, subsuming the others and lifting them to new status. Mr. Griffin's "third motive" makes sense to me only as another way of saying that these

beings have God-given value. Simply adding up names of different kinds of motives, as if they were money to be counted, doesn't tell us much about the real powers that move men's hearts...

IV

Mr. Griffin's final point is an extension of the practical concern of the third. Here he is at pains to agree completely with my concern for human justice, including the claim of the Third World to development. But characteristically he presents his own view as better suited than mine to this goal, brushing aside my fears that granting "reverence" and "rights" to nature is likely to cost some men their health and maybe their lives. I need not worry, he says, because "reverence" is not uncritical. There is a "hierarchy of intrinsic value" in nature, and non-human nature does not have the same rights as man – not necessarily even the right to exist!

Frankly, I am much relieved by our practical accord at this point. As long as we agree that the primacy of value is assigned to man, with no "if's" or "but's," he can define "reverence" any way he wants to, and I won't quarrel. But I think all men of good will ought still to keep a wary eye on the anti-humanism which has cropped up elsewhere in the environmental movement...

I am less happy with his contention that my humanism is actually less effective than his version. He arrives at this conclusion via an exaggeration and a rather strange argument. The exaggeration is to accuse me of arguing that "every slight benefit to the human species is justifiable, no matter how much suffering, depletion, and even extinction it requires among other species." This charge cannot be supported out of the book. It is simply untrue...

More serious is his "logic of liberation" argument; but as I say, I find it strange. He says that unless we protect all nature, not just men, from exploitation, no group, not even men, are safe. Unless we recognize the rights of subhuman creatures, we may abandon the rights of some humans too easily. Maybe so, but I don't believe it. The "hierarchy of rights" he wants to construct along his continuum of existence could just as easily promote the mentality of the sliding scale and apply it to human beings, so that some were considered less worthy than others and perhaps expendable in a crisis. I think it is better, if all men are to be safe from their fellows, that we make clear the *qualitative,* not quantitative difference between human rights and the value of nature...

GOD'S LOVE, ECOLOGICAL SURVIVAL AND THE RESPONSIVENESS OF NATURE

A contribution from Charles Birch and John B. Cobb, Jr.

The ecological crisis has called our attention to the need for adopting a different pattern of behaviour to our environment. It leaves open the question of whether the requirement of such changes in behaviour and the nature of these changes will be adequately based on traditional views of nature, such for example as is found in the thought of Western Christendom, or whether some radically different alternative is called for.

It is our judgment that the dominant view of nature in Western Christendom, such for example as that presented by Derr (1973) in his book "Ecology and Human Liberation" is gravely deficient both as an interpretation of biblical views of the creation and as a basis for an adequate contemporary ethics of ecology. Rather than criticize this position, apart from some few comments, we shall briefly indicate the nature of an alternative view which, to us, is faithful to a stream of Christian thought (though not the main-stream) which is today represented by process theology. This view comes nearer to the tradition of Eastern Christendom in its valuation of nature than to the dominant thought of Western Christianity.

The view expressed by Derr in his book comes close to depicting as mere object the whole universe except for man and God. All the rest is contrivance. But are the mechanistic analogies derived from a deficient science the best analogies of the natural order? We think not.

A fundamental problem is how purpose and subjective experience have evolved out of a seemingly mechanical and objective set of physico-chemical building blocks of which the universe is made. One answer to this has been to postulate a fundamental dichotomy between the physical and the mental, between the objective and the subjective, between nature and God. But in none of the many dualistic views has the relationship between the two parts ever been satisfactorily explained. An alternative view is that it is we who carve the universe up into different sorts of entities through our deficient view and that fundamentally the universe is a universe and not a multiverse, that purpose and subjective experience are not something added on at a late stage of cosmic evolution to a few entities in creation, but that these are intrinsic to the creation itself. There is an objective and a subjective side to all entities that have any individuality at all, be they electrons or elephants or men. Man is not only the creature who can interpret existence. He is the one who exemplifies the nature of reality. Far from being the exception in creation he is the flower of a plant that is one in its nature. This is not to demote man from a unique position but to see his uniqueness as something that could only have come into existence if all of existence has some kinship with what we know clearly in ourselves – subjective experience.

The emphasis in this view is on experience, responsiveness, and creative advance to yet unrealized possibilities and values.

We cannot know what is the subjective side of existence for the tiger, let alone the electron. We cannot know it, except by inference, for other human beings besides ourselves. Yet most of us do not hesitate to ascribe feelings to other people. We allow that they too have feelings and thoughts and aspirations. It is intrinsic to the Christian view of man that all men are responsive. It is intrinsic to the stream of thought we are adumbrating that man and all created entities have a subjective side to their existence. Most of us are prepared to concede this for our domestic pets. We are concerned when our pets suffer and rejoice when they seem to be happy. But we think little of this aspect of existence lower down the scale.

The important question of this discussion is whether there is intrinsic value beyond man. Western Christendom has affirmed the intrinsic value of man. But so far as the rest of creation is concerned it is primarily of instrumental value – to be of use to man. Man is the lone actor in the drama of the universe. All else is there to serve his purposes. The rest of creation are like the automobiles we construct. They are there simply to serve us. We readily slip into the view that the only value of non-human nature is its value to us.

What could give intrinsic value to non-human creation? In the view of process theology all feeling has intrinsic value. Feeling is the base of the subjective side of all things. All entities from electron to man embody feelings and therefore are of value. This view is the antithesis of mechanism and materialism. Is the universe and its parts more like a life or a contrivance? It is more like a life. Indeed ultimately the life of man is a better model of existence than the physicist's construct of the atom. This is putting anthropomorphism where it belongs, to set man as the exemplar of creation and not the only creature of value.

A consequence follows from this valuation of nature. The non-human creature, if it has intrinsic worth, has rights. Just as we give rights to the incompetent human being and appoint guardians of those rights, so man has the responsibility of being a guardian of the rights of non-human nature. It may be difficult to define these rights in detail. However, in general terms our responsibility is to look upon non-human nature in terms additional to its instrumental value to us. The instrumental value to us must be weighed with the intrinsic value to itself and to God. We tend to leave out the second term in the equation. Many animals are slaughtered to serve as food for man. This instrumental value to man should be weighed against the intrinsic worth of all these creatures.

This point of view is in marked contrast to the theological proposition of the Pont-a-Mousson report of the W.C.C. on "The Technological Future of the Industrialized Nations and the Quality of Life" (*Anticipation,* December, 1973, p. 13). This report proposed that "it is man, not nature, who is made in the image of God. Nature does not, therefore, have rights of its own at the cost of human beings". This is the proposition that nature is here to serve man and man should not be expected to suffer any cost for the sake of non-human nature. The issue is now assuming greater practical importance each year. Already the concept of wild life parks in Africa is being challenged on the grounds that each park means less food and living space for people. Are all the priorities with people? If the preservation of the African elephant as a species means deprivation on the part of certain people, are human beings to suffer no cost and let the elephant become extinct? Are the lives of ten thousand elephants, let us say, not worth the cost of some less food and some less living space for some people? In the equation elephants plus people, do elephants score zero period? There is no justification to regard this selfish anthropocentrism as the truth about the value of the non-human creation. It is a tragic devaluation of nature.

On these questions the Bible does not speak unequivocally as a single wholly unified tradition. Yet we are convinced that the position we have sketched is more faithful to its vision of God, man, and nature than are the dualisms of our dominant Western tradition since Descartes. The judgment that nature has no rights over against human beings is not that of the Old Testament, for example. The dualism of man and nature implicit in this position is not found in the Bible. Man, like all other forms of life comes from the ground and will return to it. The goodness of other elements of the creation is declared before the creation of man and apart from its usefulness to human beings.

Furthermore, this recognition of the common creatureliness of human beings with plants and animals leads to the actual attribution of rights to other creatures in the Old Testament. In Exodus 23:12 one of the reasons for keeping the sabbath is so that the animals can rest. Deuteronomy 20:19-20 extends legal protection to trees. It is only a modern reading through dualistic eyes that juxtaposes the human to the natural as two spheres of being of which one is void of all intrinsic value and rights.

Even the famous assignment of dominion to man in Genesis 1 does not have quite the meaning the dualistic West has read into it. Von Rad, for example, explains this as follows: "Just as powerful earthly kings, to indicate their claim to dominion, erect an image of themselves in the provinces of their empire where they do not personally appear, so man is placed upon earth in God's image as God's sovereign emblem. He is really only God's representative, summoned to maintain and enforce God's claim to dominion over the earth." *(Genesis,* p. 58) That man is thus to represent God's dominion in the world does not entail that he is to ignore the value and rights of those creatures in relation to which he exercises this role.

Returning to our own conceptuality, we can conceive a hierarchy of rights which generally parallels the hierarchy of feeling. It will be greater for those creatures with a nervous system most like ours and minimal for those without any complex sensory system. High grade feelings characteristic of man are no doubt very different from the feelings of lower entities. Man's own group, the mammals, are the crown of creation. The rest of nature has both instrumental and intrinsic value but on a lower rung of the hierarchy of value or intrinsic worth. Like the Bible we recognize distinctions without clearcut separation. The hierarchy we propose is roughly correlative with the one suggested in Genesis 1 and elsewhere in scripture.

Our ethic of nature will depend upon our attitude to nature's worth. Some people act to maximise value for themselves alone. Others act so as to maximise value for all men for all time. There is a third possibility and that is to act so as to maximise value in general and that includes the value of all creatures and all things. Only this third principle is sufficiently encompassing to be acceptable. Only this third principle can responsibly claim to be appropriate to the Bible.

God's relationship to the creation is not to be envisaged as that of a carpenter to the table he has made. The entities of the creation are not independent of God's continuous sustaining activity. This is a biblical meaning of creation. It is not just bringing into being but sustaining being. It is not man alone who is sustained by God but every cell and molecule in his body and every entity of existence. Without God all would collapse. God participates continually in the process of sustaining all that exists, through what A.N. Whitehead has called God's primordial nature. This is the lure of creative activity which is experienced by the entities of existence.

There is a second aspect to God's relationship to the creation. God is not the passive off-stage observer but the experiencer of all created value. Not a sparrow falls to the ground without his knowing. This is a metaphor of a God who feels the creation in all its intensity of experience, in all the joy and suffering and all the other feelings which are beyond our knowing. The eighth chapter of Romans and passages in Colossians point to such a concept in Pauline thought. This is what A.N. Whitehead calls the consequent nature of God. It is the way God grows as the universe evolves, because his experience expands with his participation in all creation. The values that are realized in experience are saved in God's experience.

When we act so as to increase realized value in any part of the creation we do it not for the moment nor for this creature or that alone but for God also. God not only gives but he receives. That is the meaning of love. A love that gives but cannot receive is not worthy of the name of love.

A weak faith in the value of the creation and in the responsiveness of the creator tends to undermine belief in the creator and vice versa. Man is left only with his self-interest which, however enlightened, will not provide sufficient motivation for ecological survival and care of the world and all its inhabitants.

Our task is to rediscover the fundamental unity of the human and the non-human worlds, without surrendering the truth about man's unique worth. The task calls for a radical reinterpretation of the man-nature-God relationship that has dominated Western Christianity over recent centuries and which is not adequate to meet the task of the 20th century.

Process theology, a child of traditional neo-Calvinism and Whiteheadian philosophy is a self-conscious American youngster clamouring for attention and not always getting it. One of its more eloquent contemporary spokesmen, Schubert Ogden makes the clamouring claim this way:

> *"Among the most significant intellectual achievements of the twentieth century has been the creation at last of a neo-classical alternative to the metaphysics and philosophical theology of our classical tradition. Especially through the work of Alfred North Whitehead and,... Charles Hartshorne, the ancient problems of philosophy have received a new, thoroughly modern treatment, which in its scope and depth easily rivals the so-called* philosophia perennis." [10]

For Whitehead's own metaphysical construction, Ogden simply refers us to *Process and Reality: An Essay in Cosmology.*[11] The cornerstone of the system is the movement away from the *secondary* phenomenon of the world, which according to Ogden, occupied the centre of classical philosophy, while process philosophy starts from the "reformed subjectivist principle" of the *primal* phenomenon of self-hood.

Ogden contends that an acceptable doctrine of God can be constructed on the analogy of the self as a relational centre rather than as substance. The self is what it is as the sum-total of the events in which it has participated up to any given moment, and is continuously in a process of relating itself to other events and being formed and reformed in the course of these relations.

> *"I know myself most immediately only as an ever-changing sequence of occasions of experience, each of which is the present integration of remembered past and anticipated future into a new whole of significance."*[12]

It is on this analogy that Ogden now constructs his notion of God:

> *"God is by analogy a living and even growing God and he is related to the universe of other beings somewhat as the human self is related to its body."*[13]

If this is Whiteheadian philosophy, one can see why it can be called an 'ecological philosophy' for it seems made to order, to help us face the problems of alienation between God, man and the world; all three are now put in one inclusivist package, and there need be no alienation.

The charges usually made against process theology seem too weak or badly formulated to merit attention. One is that it smacks of pantheism. Ogden responds that it is more like pan-en-theism, i.e. the doctrine that everything is *in* God, rather than everything *is* God. The charge is usually made by those whose conception of God is as someone distinct from the world. Ogden is right, within the limits of his own knowledge, in saying:

> *"Either one must conceive God with Aquinas as wholly external to the world, something merely alongside it, and so but part of a whole somehow including God and the world together; or else one must say with Spinoza that it is God who includes the world, but only so as to make the world itself wholly necessary and our experience of its contingency and dependence an illusion."*[14]

The other criticism is the one made by John Macquarrie that the God of process theology is not quite perfect and has to become something else than he now is. Process philosophy would respond by saying that growth does not mean the absence of perfection, nor does the absence of growth mean perfection. God is perfect at every moment of his being, in that his "unsurpassability by others is a matter of principle, not simply of fact."[15]

[10] From Ogden's *The Reality of God,* reprinted in Ewert H. Cousins, ed. Process Theology, *Basic Writings by the Key Thinkers of a Major Modern Movement,* Newman Press, New York, Paramus, Toronto, 1971. p. 119.

[11] New York, Macmillan, 1929.

[12] Ogden, *op. cit.,* p. 121.

[13] *Ibid.,* p. 123.

[14] *op. cit.,* p. 125-126.

[15] Ogden, *op. cit.,* p. 123.

But as we have stated earlier, there remain certain questions which process theology has yet to answer adequately. The question of transcendence is squarely faced by these theologians. Their claim is that it is naïve to conceive God's transcendence in spatial terms, since this would, by making the cosmos other than God, make God less than the whole package God-world. The transcendence of God is temporal, i.e. in terms of the future. He is always moving beyond to the future and therefore cannot be enclosed by space plus past time.

Taken in this sense, the future of man is but part of the future of the universe, which in fact is the future of God. The three are inextricably and integrally related to each other – with this important difference, that even if the earth and sea and all that are in them perish totally and evaporate into total non-being. God may survive, insofar as the rest of the universe goes on, and God's being, though changed by the destruction of the earth and the whole biosphere-noösphere in it, can continue through other beings and processes and events in other parts of the universe.

In this sense, it is true to say that though the future of man is theoretically separate from God, for the Christian who believes that God has become Man in Christ, the future of God has become the future of Man...

Unfortunately, no process theologian seems so far to have reached the nobility of conception of Whitehead's concluding paragraphs in *Process and Reality,* which read like a very ample theology rather than philosophy. For him everything is related to everything else in one great universal relativity. The four creative phases in which the universe accomplishes its actuality include, in its final phase, the creative action of the universe, which insofar as it is completed turns back in love and compassion to the stream of ongoing events, enriching it, supporting and sustaining it, and being pouring forth the love of God in our hearts.

> *"What is done in the world is transformed into a reality in heaven, and the reality in heaven passes back into the world. By reason of this reciprocal relation, the love in the world passes into the love in heaven, and floods back again into the world. In this sense, God is the great companion – the fellow-sufferer who understands."*[16]

Whether Whitehead gets this conception from an empirical analysis or from a deep enracination in the Anglo-Catholic tradition can be discussed.

In any case there can be little doubt, that if we want today to profit from process philosophy for coping with the problems of our relations with the cosmos, it is better to go to the original master than to his quite faithful but inadequately philosophical theological disciples.

[16] *Process and Reality,* p. 532: God as the fellow-sufferer is something which must have deeply comforted Whitehead in the years after the loss of his 22-year old son Eric. But how such a concept can be part of a philosophy without Christian presuppositions is hard to see.

HUMAN DEVELOPMENT : THE AMBIGUITIES OF POWER, TECHNOLOGY AND QUALITY OF LIFE

Preliminary Notes for Section VI of the Fifth Assembly of the WCC in Djakarta, 1975

The poverty and inhuman conditions in which two-thirds of the world live today remain a blatant reality, despite the development efforts of the poorer nations. Prospects for the year 2000 – only 25 years beyond the Assembly – are for a doubling of the population of this part of the world, which with present trends means a doubling of its misery. A WCC gathering half-way through the second development decade must take special account of what this challenge means for the churches in the world. At the same time, paradoxically, the rich seem determined to secure increased affluence, with an accompanying increase in what are recognized to be its negative effects (pollution, energy crises, etc.). On both sides of this widening rich/poor gap people are yearning for greater quality of life, greater freedom from servitudes new and old. They are also troubled by the ambiguous promise of the future.

Realities of the mid-seventies thus bring together some concerns which appeared at Uppsala and have since become central in the ecumenical dialogue. It is proposed that the Assembly focus its attention on three aspects of the problem: New Dimensions in the Quest for Development; Social Responsibility in a Technological Age; and Criteria for the Quality of Life.

1. New Dimensions in the Quest for Development

At the Montreux Consultation (1970) development was defined not merely as economic growth but also as social (distributive) justice and self-reliance. These three dimensions of development need to be emphasized in Christian thought and action today.

Rapid economic growth for many of the poorer developing countries has become a deception and there is little real hope for the future. World economic policy is still centered very largely around the problems of the powerful industrial nations which still use and command the greater proportion of technological and natural resources for their own welfare. As world population increases the number of people below the level of mere subsistence steadily increases. At the same time the affluent peoples tend to resist any change which would diminish their own social and economic power and privileges.

The following points are suggested for attention at the Assembly:

- The lot of the poor majority in the African, Asian and Latin American countries continues to be a life and death struggle. Their countries may be economically growing, but their own living conditions are not improving. At the same time, the gap between the rich and the poor within countries is widening day by day. Why is this so? What contribution can the churches make to the struggle of the poor and underprivileged to participate actively in the development process and secure for themselves a fair share of the development benefits?
- Many development efforts are obstructed by patterns of social, economic and political life or by ideological and policy conflicts which do not reflect the standard of social justice and self-reliance. How can the churches, by their emphasis on peoples' participation and their search for the criteria of the human contribute to rapid and just social transformation?
- The recent international economic crises (e.g. monetary disturbance, food shortage, oil crises, spiralling inflation, etc.) have revealed one stark fact. The poor nations and their poorest people are the immediate casualties and the most vulnerable. Thus, those who have the greatest stake have the least share in controlling the prevailing structures nationally and internationally. What can the churches do to promote new international structures of economic and political cooperation for global justice?
- Recent experience of Christian involvement in the struggle for development indicates the need for deep examination of the following key issues:

  (a) The use and abuse of the power of the state, private enterprise, the military, and churches in the efforts to bring about development.

- (b) Church and state relations in the development process.
  (c) Property and responsible stewardship of world resources.

2. Social Responsibility in a Technological Age

The contemporary world cannot overcome its need, and solve the problems of human welfare and health, without a vast expansion of scientific and technological resources. But technological development involves for all societies new forms of domination and a threat to traditional values. Scientific and technological knowledge means power. It means a future increasingly dominated by 'experts' or those whom they serve. A number of questions are therefore posed by the prospects for increased dependence on science and technology:

- What technological development is appropriate to the needs of different countries and what can the churches contribute to developing a socially responsible technological policy? What can churches do to assure that modest levels of technological development may be combined with freedom from pressure from the technologically powerful?
- What can churches do to ensure that the technical discoveries of some countries can be made available to all peoples in their struggle for freedom from poverty, disease and misery?
- In view of the growing conflict between technological control and exploitation of nature and the resulting loss of ecological balance, what understanding of the limits to the use of science-based technology can the churches agree upon?
- In view of diminishing finite resources how does the Christian responsibility for economic growth to the contemporary world relate to Christian responsibility for justice to *future* generations?
- How can the churches encourage thinking about the ethical implications of the many new discoveries in science and technology where specific ethical guidance is presently lacking?

3. Criteria for Quality of Life

Underlying the concern for human development in both industrially developed and developing societies is the question of the quality of life. We are still accustomed to use crude economic indices like Gross National Product to measure social progress and human welfare. The concern for quality of life represents an attempt to find complementary elements or correctives which include criteria (national and international) like distributive justice, participation in decision-making, community life and spiritual welfare. However, the measurement of these is exceedingly difficult; and a more fully human perspective is required to integrate these values into national and international planning. The Assembly could help set forth ecumenical criteria for quality of life by taking up such points as the following:

- From the Christian perspective human life is viewed essentially as person-in-community. This may be expressed in different ways in different cultures. What criteria can the Church offer to evaluate these different experiences and contribute to new forms of community which enhance quality of life?
- A world increasingly controlled by the instrumentalities of scientific rationality seems to many to threaten the right relation between man and nature. What is the Christian critique of the direction in which such rationality is taking the world and what view of man, nature and society should the Christian adopt in challenging such an outlook?
- The lack of a clear distinction between what is needed and what is superfluous has resulted in consumerism, one of the diseases of affluent societies. What elements of modern economic life contribute to this acquisitive greed and what might the churches do to define a life style which would help societies and individuals control their appetites for goods? How can this be combined in a positive way with the concern to reduce the consumption of the rich countries in the interests of world social justice? How can the churches educate Christians to see this as their fundamental task in developing solidarity consciousness?

In the quest for human development there is increasing recognition of the place and role of power, technology and social organization. At the same time these factors are by nature ambiguous. How can the Church help those who become uncertain or confused by the dilemmas of decision-making?

THE CONTRIBUTION OF FAITH, SCIENCE AND TECHNOLOGY IN THE STRUGGLE FOR A JUST AND SUSTAINABLE SOCIETY

(Proposals for the Programme of Church and Society, 1976-1981)

INTRODUCTION

We find ourselves at a turning point in human history. A new social order that is both just and sustainable must emerge if catastrophe is to be avoided. Time is of the essence. Some believe that it is already too late; others believe that science and technology can still find ways out. However robust, the faith of yesterday in the power of science and technology is today misplaced and therefore misleading. In fact the reductionist, triumphalist, manipulative approach of science and technology has itself been in large part responsible for our predicament.

Reason and benevolence, together with the application of resources and power cannot save us. We have for too long tinkered with the problems of justice and development, with the best of wills and most generous programmes of aid and education, to now be able to believe that more tinkering will do the trick. We live in a self-destructive social order in which only radical solutions can be effective.

Christians can neither panic in the face of possible catastrophe nor retreat to a pious position of do-nothing apocalypticism. Can they, on the other hand, be confident that catastrophe can be avoided through radical action ? Our faith gives us no such guarantee. However, the confidence of faith, that whether we live or whether we die we are in Christ, gives us the liberty to do what we must without panic or despair, but also without any false optimism about the final outcome.

We believe that time is not infinite, that history will end, that the present heaven and earth will pass away, that the new heaven and the new earth will come, that the Kingdom of God is not something that happens in linear continuity with history. In this sense, Christians are not naïve utopians or simple optimists who identify this just and sustainable society with the Kingdom of God. We know that the way to the resurrection leads through the Cross, that the way to life leads through death.

Yet we also believe that the Kingdom has already broken forth into history, that human beings are stewards of nature and history, that we are answerable to God for the way we manage the planet, that the way society is organized should not be self-destructive or unjust, and that we will not escape condemnation if we bury our talent and do nothing. In this context we dare to strive for a just and sustainable society. The joy of love, not the fear of catastrophe, motivates our action in the present crisis.

I. THE NATURE OF THE JUST AND SUSTAINABLE GLOBAL SOCIETY

Our existing global society is neither just nor sustainable. Population growth and economic growth cannot continue indefinitely along past and present patterns without the collapse of much that sustains life. We are seeing some evidence of this now in regional famines, the oil-energy crisis and the hazards of high technology. The poor always suffer first and those who suffer most are always the poor. Even now half the world's population is suffering from malnutrition or starvation or both. According to the World Bank, 755 million people are in absolute poverty with an annual income of US$50 or less. In 1970, the difference in average per capita income between developed and developing countries was US$2.200. If the present pattern persists, the absolute gap will increase enormously.

The twin issues around which the world's future revolves are justice and ecology. "Justice" points to the necessity of correcting mal distribution of the products of countries. "Ecology" points to humanity's dependence upon the earth. Society must be so organized as to sustain the earth so that a sufficient quality of material and cultural life for humanity may itself be sustained indefinitely. A sustainable society which is unjust can hardly be worth sustaining. A just society that is unsustainable is self-defeating. Humanity now has the responsability to make a deliberate transition to a just and sustainable global society.

The just and sustainable global society will be one in which people everywhere will participate in making the decisions that affect them. It will be a society in which each one can feel secure that his or her quality of life be maintained at an acceptable level. The need for food at any one time will be well below the global capacity to supply it. The rate of use of non-renewable resources will not outrun the increase in resources made available through technological innovation. The emission of pollutants will be well below

– Exploration of immediate steps which rich countries can take that lead in the direction of the just and sustainable society. (Involving the extension of the W.C.C. involvement in the U.N. debate on the New International Economic Oeder.)
– The utopian possibility of some sort of international control in certain fields should not fade into the background. For example, the international control of defence, pollution, and resource rationing, and the possibility of a global progressive income tax levied and reallocated by an international body.
– The planning and management of larger urban areas as an ethical, technological and social concern and ways of decentralizing populations.

Recommendations:

1. That Church and Society be responsible for planning a world conference on the Just and Sustainable Society before the next Assembly (1979). All the elements in the reflection-action programme outlined below should be viewed as inputs or outputs of this conference. A small Working Group should shortly produce a document of some 20-25 pages on the just and sustainable society as a prospectus to initiate the study project.
2. A consultation of economists together with some ecologists, trade unionists, industrialists and technologists to face up to the problems of economic planning for a just and sustainable society at national and other levels, in contrast to traditional concepts of economic growth, particulary in the industrialized countries. (The economists should be drawn from market economies, centrally planned economies, and from developing and developed countries.)
3. A consultation of young people (including young scientists, workers, and business executives) on the problems of the just and sustainable society.

III. SCIENTIFIC AND TECHNICAL PROBLEMS AND THE ETHICAL ISSUES INVOLVED IN THE TRANSITION TO A JUST AND SUSTAINABLE SOCIETY

A. Risk Assessment and Appropriate Technology

The technology of the rich nations is based on the replacement of labour by sophisticated capital equipment, the application of science to industrial processes, and large-scale production. All this has helped to bring a higher material standard of living to nearly all people in rich nations, though partly at the expense of the world's poor. As organized at present, the system is wasteful of resources (partly through its stimulation of artificial consumer demand), and tends excessively to pollute the environment through its multitude of artificial products and wastes. Moreover, its complexity and short-term rigidity make it vulnerable to disturbance in its economic, social or natural environment. In spite of all the expense and sophistication of high technology, there is far more careless and irresponsible design and operation than is generally realized (supertankers, major chemical hazards, asbestos), and also a significant degree of incompetence and complicity among regulatory agencies.

Each major innovation in high technology tends to become a "superstar", which, while bringing benefits also, often demands vast resources, causes far-reaching environmental changes, and controls most of the expertise required for effective monitoring. Estimating the risks of such new technologies can become an exercise in guessing exceedingly low probabilities of accidents, combined with the high human and environmental costs should they occur.

An appropriate technology should aim to satisfy needs, while aiming to reduce resource-consumption, pollution, and the oppression and alienation of people. There can be no recipe for such a technology, or for an ordering of its goals. If it is to be appropriate for people, it must relate to their local habitat – land, climate, resources, history and culture. It is not necessarily small-scale, labour intensive or simple in design, for different functions require different tools. When we consider the cumulative effects of a new technology, we try to speculate about the risks and benefits, while still being uncertain about all the facts. Often very few relevant undisputed scientific facts exist to help the community to make decisions that may profoundly influence its future. But a broad choice between technologies is better made on genuinely ethical criteria, rather than on calculations with quantities that are very imprecise, and influenced by implicit ideological bias. Nevertheless, we also recognize that all decisions, good and bad, are made under conditions of uncertainty, and that reducing the extent of the uncertainty by enlarging the base of the even handed facts should concern us all.

Recommendation:

A small consultation in 1977(?) on risk assessment and appropriate technology, and the relation of the new sort of science and technology, to economic and political thought and action.

B. Agricultural Technology and the Food Crisis

We identify four areas of concern for the W.C.C. (to be examined in cooperation with CCPD):

1. Emergency world food reserve for use in the event of wide-spread crop failures or other natural disasters.
2. Development of appropriate food technologies that are ecologically sound and compatible with self-reliant development. The main need is in the tropics where some 5.000 million people will be living at the end of the century and where most of the food will have to be produced where it is needed.
3. Critique of present food technologies in developed countries (e.g. the energy intensive operations of modern agriculture), and the use of food as a "political weapon".
4. New life style in consumption.

There is need for people, especially in the developed countries, to make a new moral commitment, to reduce unnecessary consumption of food and energy and to conserve these resources. At the same time, the problem of how reduced consumption in the developed world will help to make resources available to the poorer world should be pursued. (See also Section C.)

Recommendations:

1. That a small group of about five experts on food and agricultural technology, meet with staff in Geneva to discuss areas of agricultural technology on which it would be appropriate for Church and Society to focus in relation to the just and sustainable society.

3. The W.C.C. through the sub-unit on Church and Society should continue to participate in current initiatives to further evaluate the role of nuclear power and should attempt to communicate the results of this process to the International Atomic Energy Agency (IAEA) and to the churches. (An abstract of the social and ethical issues to be presented to the IAEA Conference on "Nuclear Power and its Fuel Cycle", to be held in Salzburg, May 2-13, 1977, was submitted to the Central Committee.)
4. The Church and Society programme should also actively examine world fossil fuel strategies and report on their ethical and political implications as well as their social benefits and costs.

Note: The Core Group has proposed a small Energy Advisory Group to assist the sub-unit on Church and Society in the development and implementation of this reflection-action programme on energy for a just and sustainable society.

Dr Shem Arungu-Olende (Kenya)
Electrical Engineer and Energy Specialist, Centre for Natural Resources, Energy and Transport, United Nations, New York

Prof. H.B.G. Casimir (Netherlands)
President, European Physical Society; President, Royal Dutch Academy for the Arts and Sciences

Dr John M. Francis (U.K.)
Senior Research Fellow in Energy Studies, Heriot-Watt University, Edinburgh

Dr William Nashed (Egypt)
Industrial Training Adviser, United Nations, Riyadh, Saudi Arabia

Prof. David Rose (U.S.A.)
Professor of Nuclear Engineering, M.I.T., and Consultant to the Office of Technology Assessment, U.S. Congress

Dr Jorge Sabato (Argentina)
Physicist and former Member of Atomic Energy Commission

Prof. Roger L. Shinn (U.S.A.)
Professor of Social Ethics, Union Theological Seminary, New York

Dr K.T. Thomas (India)
Director, Engineering Services Group, Bhabha Research Centre, Trombay.

D. Allocation of Resources Beyond the Control of National Goverments

The Nairobi Assembly emphasized the need for the churches to be concerned about "the allocation of common resources not yet claimed by particular nations". These include the exploitation of the sea-bed, and other regions currently beyond the control of national governments or inter-governmental agencies.

Recommendation:

That a watching brief be kept on proposals for use of what are at present "international commons", e.g., the sea-bed. The immediate need is protection of such areas with a view to a fair distribution of the resources they contain.

E. National and Private Ownership of Resources

The need for a more just distribution of the earth's resources challenges the concept of the national and private ownership of these resources.

Recommendation:

That Church and Society encourage an appropriate person (or persons) to write one or two exploratory papers on the subject for publication in ecumenical journals and study in the churches.

IV. SCIENCE AND FAITH AND THE VISION OF A NEW SOCIETY

The Nairobi Assembly identified two areas in the encounter between science and faith. One is in ethics. The application of scientific discoveries to human affairs raises ethical issues which science alone cannot resolve since science itself does not prescribe the good. The second area is the challenge of the Christian view of the creative activity of God in the world to the dominant scientific view of reductionism and materialism.

A. Theological and Ethical Dilemmas in the Biological Manipulation of Human Life

Recent discoveries in the biological and medical sciences raise new ethical questions in uncharted areas. Some of these have been pursued by Church and Society in the discussions of its Zürich consultation as recorded in *Genetics and the Quality of Life* (published in 1975, eds. Charles Birch and Paul Abrecht). The Nairobi Assembly in the report of Section VI urged the importance of pursuing this discussion into further areas of concern. To this end the following proposal is made:

Recommendations:

1. That a consultation be held on the theological and ethical issues involved in
   a. experimentation on human foetuses and transplantation of ova fertilized outside the body *(Genetics and the Quality of Life*, pp. 210-211);
   b. the future possibility of direct manipulation of human genes for the purpose of replacing deleterious by "normal" genes (*Genetics and the Quality of Life*, pp. 55-56);
   c. artificial prolongation of human life in terminal illness.

   The consultation should seek a greater understanding of the meaning and mystery of human life and death with the objective of providing a framework of ideas and values within which biological manipulation at the beginning and at the end of human life might be legitimately conceived. To keep the consultation small and specific, the subject of behavioural control is deliberately excluded.

   The consultation should consist of about 20 persons from the following disciplines: theology, ethics, reproductive physiology, molecular genetics, pediatrics, obstetrics and law.

. That a watching brief be kept by Church and Society on the discussions amongst scientists for a moratorium on genetic engineering in micro-organisms.*) At an appropriate stage Church and Society should prepare an article for publication in an ecumenical journal to stimulate debate on this subject.

. That a watching brief be kept by Church and Society on developments in control of human behaviour and the deterministic interpretation of human behaviour with a view to proposing the best time for a consultation. In the meantime, Church and Society might prepare material for a paper to stimulate thought on this subject.

Note: The methods for controlling human behaviour at resent used are chemical (drugs), physical (electrical stimu-), surgical and psychological. Studies of behaviour have led ot only to methods of controlling behaviour but also to the ew "socio-biology" popularized by Lorenz, Ardrey and lorris which is having a wide influence in its interpretation f human behaviour in deterministic terms.)

. Science, Ideology and Faith: A Critical Evaluation of World-Views

The Consultation on "The Christian Faith and the hanging Face of Science and Technology" in Mexico City August 1975) found that science and faith challenge each ther at the levels of both doctrine and ethics. Science and echnology have become dominant modes of thinking and ction throughout the world, and create obstacles to the resentation and understanding of the Christian faith in most ultures. Also, in making possible large-scale interference by nan with his environment, science and technology raise thical problems which lie beyond the traditional insights of he Christian community. There are, therefore, practical, heoretical and spiritual tasks to be performed in exploring he relationship of nature, man and God. These include a ritique of the dominant scientific world-view and the deologies which depend on this, a reformation of theology o take account of its situation vis-à-vis science, and a eintegration of Christian and scientific world-views in a way hat will illuminate both doctrine and ethics.

Characteristics of the Scientific World-View

Science has often in the past been characterized by a nechanist, reductionist and determinist cosmology drawn argely from the triumphant physical sciences. It is still argely characterized by instrumental, pragmatic and imperonal values, and by a secularist ideology that excludes God rom the universe and believes in automatic progress in istory. At the same time, and increasingly in developed ocieties, the absence of humane moral values in the peration of science and technology is coming to be uestioned, and scientists themselves are searching for cceptable goals for the use of science. While today scientific heory has gone beyond mechanist cosmology, the latter is till adhered to by many scientists and decision-makers. The raditional polemics of science against faith to which the osmology gave rise are still seen as a problem among two orts of groups: (a) in parts of the Church where fundamenalism is influential, and (b) among our contemporaries who till believe that science has disproved religion.

*) At present research in "genetic engineering" is confined to micro-organisms in which genes can be transferred from one micro-organism to another. A hazard in this research is that new micro-organisms virulent to man could be accidentally produced with possible disastrous consequences, hence the call by some for a moratorium on such research.

A Unified View of Man and Nature in the Perspective of Faith

Few now believe that science can yield all knowledge or solve all problems of man and society. In the consequent ideological and moral vacuum, many look to religious faith for answers. But the legacy of scientific secularism has had difficulty in accepting traditional values and beliefs associated with Christianity. In any case, Christianity grounded its moral principles in theological principles, and here we must realize that theology itself is in serious disarray. It has no relevant value-system to present in the ethical debates about science; it has no unified cosmology of man and nature; and it has lost its nerve with regard to its own methods and the rational justification for its traditional formulations of belief. Therefore, the ethical and cosmological challenges from science should force theology to re-examine its own principles.

To respond to this challenge, theology needs to rethink its doctrine of man and nature. Also, scientists who are Christians need to be able to integrate their views of nature and man drawn from science, with their faith in the God of nature and man. Theology is at present badly equipped to satisfy this need. The Old and New Testament show that there is an integral relation between individual men, society and nature. However, this conceptual unity was disrupted in the 17th century – a disruption which led, on the one hand, to the possibility of man seeing himself as separate from objective nature and consequently to the development of natural science, and, on the other, to the retreat of religion and theology into the specifically human in detachment from nature.

Attempts to overcome this dichotomy are open to the danger of irrationalism and anti-science, as they try to put the clock back to pre-scientific ways of thinking. But this is not the answer. A new view of man in nature needs to take full account of scientific achievements and discovery and to develop new insights in science, and also to deepen theological insights into the relation of God and the world. Where can we look for these theological insights ?

In the Bible and in church tradition, God acts at two levels: in the community of men and women now and in all history, and also in the rest of the non-human universe which, after all, He created. The first of these two levels has been much discussed and generally accepted in Christian tradition but the second has not been fully understood nor accepted.

Some models of the relation of God to nature have been proposed: chance models, models of the Word and the covenant. But there is a need to go beyond the mechanism and materialism of many of these models to a reinterpretation in terms of a dynamic view of creation. Several questions arise about the relation of God, humanity and nature:

i. What is God's relation to nature ?
ii. What is the relation of humanity to nature? Is nature only the stage on which the drama of human life is performed ? Is man subject to nature, or master of it, or pertner with it ? What attitudes follow from these varying conceptions?
iii. Does non-human nature participate in any way in the salvation wrought in Christ ?

In the attempt to develop theological insights into these questions, it should not be forgotten that the very language of theology is also challenged, and that unanalyzed theological jargon often fails to communicate meaning. We now have the possibility of theological renewal not in inward-looking technical discussion, but in the context of current problems, where the agenda is presented from the community of faith and also from the secular world.

Science and Ideologies

Theological formulations have usually been defined in history in situations of conflict between the community of faith and surrounding alternative ideologies. Some influential ideologies of our day are Marxism, liberal humanism, and the faith in scientific-technological solutions. Marxism has both a systematic philosophical framework and a political power-base, and is greatly influential in theory and practice in many parts of the world. Like liberal humanism and faith in scientific solutions, Marxism also arises historically from the scientific movement of the 17th and 18th centuries. All three ideologies have made positive contributions, but are subject to the Christian critique of the scientific world-view. Some of these ideologies are especially relevant to views of the nature of man, with consequences for the stewardship of nature, for personal freedom, and for the sanctity of life and death. Many of the conceptions of these ideologies have permeated the Church. It therefore seems important that these views of man and nature should be made explicit in W.C.C. discussion, and consideration should be given to their consistency with new reflections upon Christian faith.

Learning from Other Cultures

The cultures which have not shared the scientific history of the industrialized world, are increasingly affected by the modes of thought and technology which the scientific movement has produced. Thus the critique of the scientific world-view and reformulations of theology and ethical principles required are as relevant to them as to the developed world. At the same time, their own indigenous cultures often include insights into more unified relations between God, men and nature which can contribute to these reformulations.

Recommendation:

That Church and Society convene one or more consultations on *Science, Ideology and Faith: A Critical Evaluation of World-Views;* dealing with the following interrelated topics:

1. A critical evaluation of the scientific world-view, together with its consequences for the current ideologies of liberal humanism, scientific-technological progress, and Marxism.
2. What insights are available in the traditional cultures of the developing world towards renewal of man's relation to nature ?
3. A self-critique of theology, with special reference to the question of how nature should be understood in relation to God and man.
4. The concept of the Just and Sustainable Society and the new thinking about science, technology and economics which it requires raises many questions about traditional values dominant in a technological and growth-oriented society. New thinking in Christian ethics is urgently needed on these many issues.

These consultations will require at least two years of careful preparation and involve the participation of scientists, philosophers, and theologians. Younger scientists and science students should be included among those invited to these consultations. It is also recommended that an ecumenical conference should be organized specifically for science and technology students on the issues of Faith, Science and Society. Other sub-units in Unit I are expected to join in the development of this programme on Science and Faith.

APPENDIX I

List of Participants, Core Group Meeting, Glion, Switzerland, May 15-20, 1976

The Core Group met in the Hôtel Righi-Vaudois, Glion, Switzerland, May 15-20, 1976. The meeting was chaired by Prof. Charles Birch (Australia) and the following members were present:

I. Members of the Working Committee (Core Group)

BIRCH, Prof. L. Charles
Interim Chairman
Challis Professor of Biology, University of Sydney, Australia

ARUNGU-OLENDE, Dr Shem
Center for Natural Resources, Energy and Transport, United Nations, New York, U.S.A.

DOXIADIS, Prof. Spyros
President, Institute of Child Health, Athens, Greece

GREGORIOS, Metropolitan Paulos
Principal, Orthodox Theological Seminary, Kottayam, India

HESSE, Prof. Mary
Professor of History and Philosophy of Science, University of Cambridge, U.K.

IHROMI, Mrs T.O.
Lecturer in Sociology, University of Jakarta, Indonesia

de LANGE, Dr H.M.
Director, Academic Institute for Fundamental Training in Industry, Rotterdam, Netherlands

SHINN, Prof. Roger L.
Professor of Social Ethics, Union Theological Seminary, New York, U.S.A.

(Dr. Günter Scholz, biochemist from East Germany, was unable to be present for personal reasons.)

II. Consultants

a. Nuclear Energy Issues:

FRANCIS, Dr John M.
Senior Research Fellow in Energy Studies, Heriot-Watt University, Edinburgh, U.K.

OPELZ, Mrs Merle
International Atomic Energy Agency, Geneva Office

ROSE, Prof. David J.
Professor of Nuclear Engineering, M.I.T., U.S.A.

THOMAS, Dr K.T.
Director, Engineering Services Group, Bhabha Atomic Research Centre, Trombay, India

TIBELL, Dr Gunnar
Swedish Physicist, working with the European Nuclear Research Centre (CERN), Geneva

b. Risk Assessment and Alternative Technology:

NWOSU, Dr B.C.E.
Executive Secretary, Natural Sciences Research Council of Nigeria

RAVETZ, Dr Jerome B.
Secretary, Council for Science and Society, London, U.K.

Theological formulations have usually been defined in history as questions of conflict between the community of faith and surrounding religious traditions, some religious ideologies or any key art forms. Liberal humanism, and the look to scientific technological advances. Western has both a systematic philosophical framework and a political power base, and is greatly influential in every day practice in many parts of the world. Like liberal humanism and faith in scientific solutions, Marxism also arises historically from the scientific movement of the 17th and 18th centuries. All these ideologies have made positive contributions, but are subject to the Christian critique of the scientific worldview. Some of these ideologies are especially relevant to every of the issues of man, with consequences for the worldview of science, for personal freedom, and for the meaning of life and death. Many of the emergents of these ideologies have presented the Church. It therefore seems important that these views of man and nature should be made explicit in W.C.C. discussion, and consideration should be given to their contemporary and new reflections upon Christian faith.

Learning from Other Cultures

The cultures which have not shared the scientific history of the industrialized world are increasingly affected by the modes of thought and technology which the scientific movement has produced. Thus the contexts of the scientific worldview and the implications of theology and ethical principles requires, as it relates to them as to the developed world. At the same time, their own indigenous culture often includes insights into more unified relations between man and nature which can contribute to these reformulations.

Recommendations

That Church and society centres are or more consulting tions on Science, Ideology and Ethics, a Critical Evaluation of Hard Power, dealing with the following interrelated topics:

1. A critical evaluation of the scientific world view, together with its consequences for the current ideology of liberal humanism, scientific-technological progress, and Marxism.
2. What insights are available in the Judeo-Christian tradition of the developing world towards renewal of man's relation to nature?
3. A self-critique of theology, with special reference to the question of how man and nature should be understood in relation to God and man.
4. The concept of the just and sustainable society and the new thinking about science, technology and economics which it requires raises many questions about traditional values dominant in a technological and growth-oriented society. New thinking in Christian ethics is urgently needed on these many issues.

These consultations will require at least two years of careful preparation and involve the participation of scientists, philosophers, and theologians. Younger scientists and science students should be included among those invited to these consultations. It is also recommended that ecumenical conferences should be organized specifically for science and technology students on the issues of Faith, Science and Society. Other networks in which I are engaged to pass in the development of this programme on Science and Faith.

. **Science and Faith:**

LYONS, Ms Cathie
Assistant General Secretary, Health and Welfare Division, Board of Global Ministries, United Methodist Church, U.S.A.

SIEGWALT, Prof. Gérard
Professor of Dogmatics, University of Strasbourg, France

II. **Staff**

ABRECHT, Dr Paul	Church and Society
BAUSWEIN, M. Jean-Jacques	Communications
STALSCHUS, Miss Christa	Church and Society
VISCHER, Dr Lukas	Faith and Order

APPENDIX II

Decisions of the Central Committee of the W.C.C. concerning the Programme of Church and Society (August 1976).

The Central Committee meeting in Geneva, August 0-18, 1976, agreed on the following programme recommenations for the sub-unit on Church and Society:

The focus for post-Nairobi study in this sub-unit self should be: "The Contribution of Faith, Science and echnology in the Struggle for a Just, Participatory and ustainable Society". It is urged that there be more emphasis n the social sciences and social technology.

In this context, the main task of the sub-unit is to lan the proposed World Conference on a Just, Participatory nd Sustainable Society. This Conference will necessarily nvolve a substantial contribution of many sub-units (espeially those of Unit II) and a significant contribution also rom the sub-unit on Dialogue to interpret the technological risis in its relation to all ideologies and spiritualities. And he planning and educational process before and after the Conference must see that the Conference remains close to he existential questions of its concerned publics, and especially to those of the rank and file church members. Full use should be made by the Conference of related opportunities, such as professional meetings and U.N. conferences. Increased cooperation should be sought with Roman Catholic study groups working on problems of Faith, Science and Society.

3. The Central Committee welcomes the Review Committee's wish that study on Science and Faith, comprising also a critique of current scientific and technological world-views and their ideological implications should receive special attention in the period up to 1979. The Committee emphasizes the importance of seconded staff time for this part of the programme.

4. **Recommendations:** The Central Committee accepts the proposal of a World Conference as tentatively outlined by the Core Group on Church and Society and authorizes Church and Society staff and its Working Group to begin the preparations and provide a more detailed plan at the Central Committee meeting in 1977.

The Central Committee welcomes the plan to hold several small specialized consultations between now and 1979 on particular issues related to the main theme and considers these also as preparation for the World Conference. Two such consultations are planned for 1977:

a. An exploratory meeting on Science, Ideology and Faith, a critical evaluation of world-views;

b. a consultation on energy carrying forward the discussion within the churches on the social and ethical implications of nuclear power and alternative energy systems. This would be a follow-up of the recently published report on "Energy for a Just and Sustainable Society".

The Central Committee recommends that Church and Society consult with the relevant sub-units in Unit II regarding the implementation of the proposed action programme – "Energy for my Neighbour" – and report to the Executive Committee in spring 1977.

From **Radical Technology**, edited by Godfrey Boyle and Peter Harper; Wildwood House, London, 1976.